**DOCTOR OF CLINICAL PSYCHOLOGY (DCLINPSY)**

**Doctorate in Clinical Psychology : Main Research Portfolio**

# 1) The 'Long-Term' Effects of Universal School-based Anxiety Prevention Programs: A Systematic Review; 2) Routine Outcome Monitoring in CAMHS: How Can We Enable Implementation in Practice? ; 3) Dispositional Mindfulness and its Relationship to Distress and Functioning in Adolescents with and without Chronic Pain.

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# Main Research Portfolio Submitted in Part Fulfilment of the requirements for the Degree of Doctorate in Clinical Psychology

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## Abstracts

### Literature Review

Previous reviews demonstrate that universal school-based anxiety prevention programs are generally effective in the short-term, but have not yet provided a clear evaluation of the longer-term effects. This review focuses exclusively on randomized controlled trials (RCTs) of universal school-based anxiety prevention programs with a follow-up at 12-months or beyond. In total, 359 references from previous reviews in the field were screened; PubMed and PsychInfo were also systematically searched. Eight studies met criteria (each based on cognitive-behavioural principles), comprising 7522 children aged nine-18 years. Risk of bias in most studies was high, thus a formal meta-analysis was not conducted. Three of the eight studies reported greater reductions in anxiety symptomology in the prevention group compared to the control group at post-intervention (immediate effect) and each of these studies also reported maintenance of this effect at 12-month follow-up. Two further studies reported a 'delayed' effect at 12-months follow-up. Each of these five studies was evaluating the FRIENDS program and estimated effect sizes at 12-months follow-up varied from 0.2 to 0.69 (*Hedges g*). The final three studies reported no immediate or long-term effects. It was not possible to draw firm conclusions regarding the influence of delivery mode (teacher versus health professional), parent sessions or child booster sessions. Further high quality RCTs with long-term follow-up periods are needed to help address a series of questions raised by this review.

### Service Improvement Project

*Background*: Many Child and Adolescent Mental Health Services (CAMHS) across the UK are beginning to use Routine Outcome Monitoring (ROM). However, clinician concerns and practical issues often hinder implementation. *Method*: This study surveyed the experiences of 20 clinicians from a large urban CAMHS network at the beginning and end of an initial six-month ROM implementation period to explore implementation barriers and generate improvement ideas. Ten interviews pertaining to five different cases were also conducted allowing for the triangulation of clinician and service user perspectives on the use of ROM in each case. *Results*: Clinicians and service users were generally more positive than negative about ROM, and clinicians who used ROM more also tended to value it more. Clinicians' use of ROM increased significantly over the implementation period, but corresponding attitudes towards ROM did not change. Key implementation challenges included clinician concerns about the value and use of ROM data, poor technological support and competing priorities. *Conclusions*: Exploring challenges raised by clinicians and service users at the early stages of ROM implementation can help

provide a focus for improvement efforts. Ideas for future research and important limitations of the study are discussed.

**Main Research Project**

*Objective*: Dispositional mindfulness is the tendency to pay attention to present-moment awareness without judgment. The main aim of this cross-sectional study was to investigate whether dispositional mindfulness accounts for unique variance in distress and functioning in adolescents with and without chronic pain. *Method*: 54 adolescents seeking help for chronic pain and 94 adolescents from the general population completed the same battery of measures including the Child and Adolescent Mindfulness Measure of dispositional mindfulness (CAMM). *Results*: As predicted, dispositional mindfulness accounted for unique variance in mood and anxiety in both groups and also the combined data-set after controlling for age, pain intensity, pain-catastrophising and pain-acceptance. However, dispositional mindfulness did not predict physical or social functioning in either group. Dispositional mindfulness scores were normally distributed in both groups, did not differ significantly across the two groups and were not associated with pain intensity in either group. The CAMM demonstrated good internal consistency in both groups. *Conclusions*: Dispositional mindfulness is an important construct to consider with adolescents experiencing mood and anxiety problems in both general population and chronic pain samples. Further research should aim to replicate these findings in a larger clinical sample and explore the predictive power of dispositional mindfulness in longitudinal designs.

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# Critical Review of the Literature

## *The 'Long-Term' Effects of Universal School-based Anxiety Prevention Programs: A Systematic Review*

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**Abstract**

Previous reviews demonstrate that universal school-based anxiety prevention programs are generally effective in the short-term, but have not yet provided a clear evaluation of the longer-term effects. This review focuses exclusively on randomized controlled trials (RCTs) of universal school-based anxiety prevention programs with a follow-up at 12-months or beyond. In total, 359 references from previous reviews in the field were screened; PubMed and PsychInfo were also systematically searched. Eight studies met criteria (each based on cognitive-behavioural principles), comprising 7522 children aged nine-18 years. Risk of bias in most studies was high, thus a formal meta-analysis was not conducted. Three of the eight studies reported greater reductions in anxiety symptomology in the prevention group compared to the control group at post-intervention (immediate effect) and each of these studies also reported maintenance of this effect at 12-month follow-up. Two further studies reported a 'delayed' effect at 12-months follow-up. Each of these five studies was evaluating the FRIENDS program and estimated effect sizes at 12-months follow-up varied from 0.2 to 0.69 (*Hedges g*). The final three studies reported no immediate or long-term effects. It was not possible to draw firm conclusions regarding the influence of delivery mode (teacher versus health professional), parent sessions or child booster sessions. Further high quality RCTs with long-term follow-up periods are needed to help address a series of questions raised by this review.

*Keywords*: Anxiety, prevention, schools, universal, long-term, public health

## Introduction

Anxiety disorders often start in childhood or adolescence (Costello, Egger, & Angold, 2005) and can lead to significant distress, poor educational outcomes and comorbid mental and physical health problems (Donovan & Spence, 2000). Studies estimate a childhood prevalence rate of between 10-15% (Snyder et al., 2009) and a lifetime prevalence rate of close to 30% (Kessler et al., 2005). Cross-sectional research suggests that as few as 18% of children and adolescents that would meet clinical criteria for an anxiety disorder access mental health services (Essau, 2005). Those that do, usually receive psychological approaches with average treatment effect sizes (*d*) in the moderate region of 0.6 (Reynolds, Wilson, Austin, & Hooper, 2012), but these are often not offered until after rigid and resistant patterns of behavior and cognition have already been established (Craske & Zucker, 2001). Thus there are a large number of children and adolescents living in the community with undiagnosed and/or untreated anxiety disorders.

In response to this public health priority, there has been a proliferation of studies published since the turn of the century developing and evaluating programs designed to *prevent* the onset of anxiety in childhood and adolescence (Werner-Seidler, Perry, Calear, Newby, & Christensen, 2017). Within the literature, there is an important distinction between delivering a prevention program to a 'universal' population that has not been identified based on any risk, compared to delivering a prevention program to a 'selective' population who are deemed at higher than average risk of developing anxiety or an 'indicated' population presenting with elevated sub-threshold symptoms (Haggerty & Mrazek, 1994). Given that universal prevention programs may be less stigmatizing (Fisak, Richard, & Mann, 2011), can overcome difficulties associated with screening for risk of anxiety (Donovan & Spence, 2000) and can reach all children regardless of symptomology (Masia-Warner, Nangle, & Hansen, 2006), there has been increasing debate about whether schools could routinely deliver universal anxiety prevention programs (Barrett & Pahl, 2006).

Christensen and Neil (2009) conducted an initial review evaluating the effectiveness of universal, selected and indicated school-based anxiety prevention programs, reporting positive immediate post-intervention effects for 11 of the 16 universal trials included in their review (69%), with small-large effect sizes ranging from 0.31-1.37. Only six of the universal trials included in their review employed a follow-up measure (ranging from eight to 36 months), and three of these (50%) reported positive effect sizes ranging from 0.22 to 0.70. For each of these studies, the longer-term prevention effect was

at 12-months follow-up, but risk of bias was judged to be high in each study and the sub-sample is too small to generalise from.

Additional large-scale universal school-based anxiety prevention trials have been published in recent years (e.g., Stallard et al., 2014) and five broad-ranging reviews have been published since Christensen and Neil (2009), but it is difficult to extrapolate the specific longer-term effects of universal school-based anxiety programs because none of these reviews were set up with this as a focus. For example, in their meta-analysis of 65 anxiety prevention studies, Teubert and Pinquart (2011) reported a small meta post-intervention effect size of 0.22 and a small meta short-term follow-up effect size of 0.19 (e.g., at three-months post-intervention). However, the review does not provide details regarding the length of follow-up periods, combines data from studies employing different follow-up periods and also combines data from universal, selective and indicated trials. In their meta-analysis of 35 anxiety prevention studies, Fisak et al. (2011) reported a small post-intervention meta effect size of 0.18 and a small follow-up meta effect size at six-months of 0.23. But again, data were combined for universal, selective and indicated trials and few studies included follow-up periods longer than six months. Ahlen et al. (2015) conducted a meta-analysis of 30 universal anxiety and depression prevention trials and reported a small meta effect size at post-intervention of 0.13, but no effect at follow-up. Again, this review provides limited detail regarding the length of follow-up periods. Also, none of these reviews were limited to, or separated out, school-based studies.

Stockings et al. (2016) recently conducted a comprehensive meta-analysis of 146 anxiety and depression prevention RCTs, including 24 universal anxiety prevention trials. Small meta-effects were identified at post-intervention (0.16) through to 6-9 months follow-up (0.13) for the universal anxiety trials. However, it is again not possible to partial out the results from school and community-based trials in this review. Finally, Werner-Seidler et al. (2017) have published a large meta-analysis of 81 school-based anxiety and depression prevention RCTs and found a small meta effect size for anxiety programs at post-intervention (0.20) and at 12-months follow-up (0.13). However, data from universal, selective and indicated studies are combined in this review, meaning it is not possible to partial out the effects for universal school-based anxiety prevention trials.

In summary, although some recent reviews suggest that, when pooling data from broad-ranging studies, the general effects of different types of anxiety prevention programs may last up to six-nine months (e.g., Stockings et al., 2016; Werner-Seidler et al., 2017), these reviews do not provide specific details about the long-term effects of universal school-based anxiety prevention trials (due to aggregation of data from studies with only

short-term follow-up data, studies evaluating selective and indicated programs, depression studies and also studies undertaken in community settings). Therefore in order to be clear about the potential long-term effects of universal school-based anxiety programs, a review is needed that focuses exclusively on trials of this nature that have included follow-up periods of at least 12-months or beyond. This is important because public policy colleagues need guidance on this topic, and some authors have argued that the benefits of prevention programs may not be seen until the recipients have had the opportunity to pass through a period of 'elevated risk' (Gillham, Shatté, & Reivich, 2001). Identifying and focusing in detail on studies with at least 12-month follow-up periods will allow for a clean evaluation of the true duration effects, and thus provide a steer regarding how regularly 'booster' sessions might be needed. An analysis of how many studies report 'delayed' effects (i.e., effects that do not emerge until after the post-intervention time point) will provide an estimate as to the extent to which previous reviews focusing only on short-term 'prevention' effects may have missed potential longer-term benefits.

An a-priori decision was taken to focus on randomised controlled trials (RCTs), because public health policy makers are often looking for high quality evidence using 'gold standard' methodology. A decision was also taken to focus on programs including direct work with the children, because this is often the main approach available to schools, and also because the added value of parent sessions is unclear (Breinholst et al., 2012). Most (but not all) of these types of prevention programs are based on cognitive-behavioural theory, with content focussing on emotional and cognitive awareness, positive self-talk, imagery, attentional training, psycho-education, relaxation, problem solving, exposure, behavioural experiments and cognitive restructuring (Stallard, 2010). Theoretically, it is argued that promoting protective/resilience factors such as individual coping skills can help counteract risk factors such as behavioural inhibition, parental anxiety and stressful life events (Donavan & Spence, 2000). Young people who have experienced anxiety prevention programs of this nature are thought to be less likely to develop anxiety problems in response to stressful life events due to the deployment of adaptive coping strategies (Barrett & Turner, 2001). It is acknowledged that by focussing on RCTs and programs that emphsise direct work with children, this review is likley to capture mostly (if not entirely) cognitive-behavioural prevention programs.

Based upon the tentative conclusions drawn by the previous broad-ranging reviews described above, it was hypothesised that a small effect size will be found at 12-months follow-up for the majority of studies included in this review. No specific predictions were made regarding the influence of delivery mode (teacher versus health professional), parent

sessions, child booster sessions or whether differential results are reported for gender and age, but these factors will be explored. Because several of the broad-ranging large-scale reviews already published in this area have captured a wide scope of studies, the current review will first inspect the references of these reviews before conducting a new database search to check for other studies not already captured.

## Method

### Inclusion Criteria

In order to focus this review on the long-term effects of universal school-based anxiety prevention programs, the following inclusion criteria were developed:

- To be included in this review the study design must have been a randomised controlled trial (RCT)
- Population: children and adolescents aged 5-18 years at the beginning of the trial; the setting must have been in school (during normal school hours)
- Intervention: a universal program offered to all pupils in the class/school/year group citing anxiety as a primary or dual prevention target (with a clear theoretical rationale); some direct work must have been undertaken with the children as part of the program
- Comparison group: either a wait-list control, attention-control or no intervention control
- Outcome measures: standardised child-completed self-report questionnaires of anxiety symptomology (taken pre, post and a minimum of 12-months following intervention).
- Only peer-reviewed journal articles published in the English language between 1980 and January 2017 were considered.

### Search Protocol

Step one was to screen all 359 publications identified by the six key reviews noted in the introduction against the inclusion criteria (Ahlen et al., 2015; Fisak et al., 2011; Neil & Christensen, 2009; Stockings et al., 2016; Teubert & Pinquart, 2011; Werner-Seidler et al., 2017). Removing duplicates revealed 178 different publications. Of these, 147 were excluded based on title or abstract alone. For the remaining 31 publications, the full text was accessed because it was not possible to assess eligibility based on title and abstract alone. The PRISMA flow-chart illustrated in Figure 1.1 provides an overview of this process. The first author (SW) and research assistant (RG) conducted this process separately and reached the same conclusion for 97% of the 178 separate publications

(yielding a Cohen's Kappa of .75). Following inter-rater discussion to resolve five discrepancies, 11 publications were judged eligible for the current review.

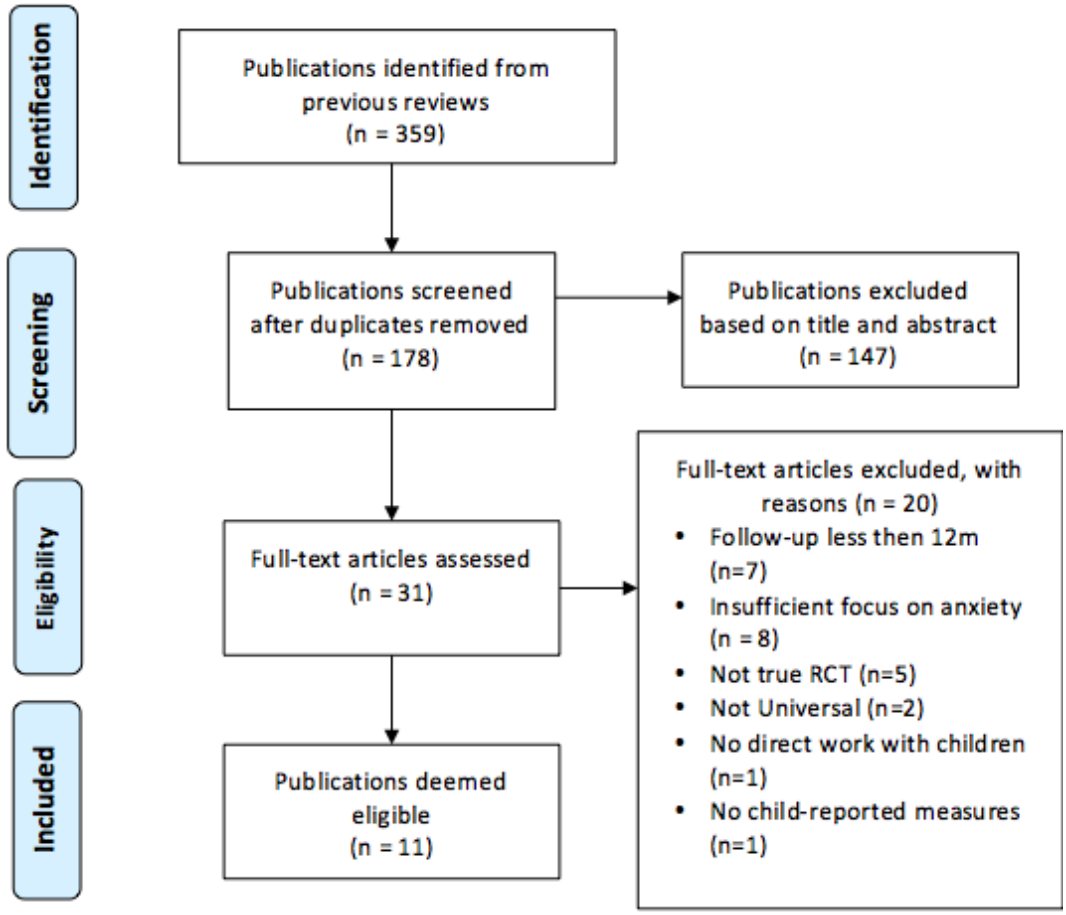


*Figure 1.1*. PRISMA flow-chart depicting step one of the search protocol

In order to check whether any additional studies could be identified via a new systematic search, step two involved carrying out database searches on PsychNet and PubMed and screening all identified publications against the same inclusion criteria. The PsychNet terms developed in collaboration with a process expert were: 'school OR universal OR adolescent OR child OR children OR youth OR teen OR teenager' AND 'prevention OR preventative' AND 'anxiety OR anxious'. The PubMed terms developed in collaboration with a process expert were: "school" OR "universal" OR "adolescent" OR "child" OR "children" OR "youth" OR "teen" OR "teenager" AND "prevention" OR "preventative" AND "anxiety" OR "anxious". The searches were performed at the 'title and abstract' level.

The PsychNet search yielded 943 publications and the PubMed search yielded 1023 publications. SW and RG screened all publications separately and excluded the vast majority of publications based on abstract/title alone, or because the study had already been screened in step one of the search protocol. SW and RG accessed a total of eight

previously unscreened full-text articles. After discussion, only one of these was deemed to meet the inclusion criteria for the current review. This study had not been picked up by the previous broad-ranging reviews in this area because it was published after their searches had taken place.

**Data Extraction**

For the purpose of this review, linked publications drawing on the same participants were collapsed yielding eight 'studies' in total. For each of these studies, the information and data were extracted by SW and checked by RG. Any differences were resolved by discussion and re-examination of the full text article.

**Risk of Bias**

The Cochrane Collaboration 'Risk of Bias' tool (Higgins & Green, 2011) was used to assess the quality of each of the eight studies included in the current review. SW and RG independently allocated a code of Low Risk, High Risk or Unsure (when insufficient information was provided by the published article to make a judgment) to each of the following categories: allocation sequence generation; sequence concealment; reporting of incomplete data; selective reporting of data; blinding of participants and personnel; blinding of outcome assessment; and other possible risks of bias. Overall, 77% of SW and RG's 56 code allocations were identical, yielding a Cohen's Kappa of .64. Each of the 13 discrepancies was resolved via discussion and re-examination of the full-text article. Where SW and RG agreed that insufficient information was provided by the published article to make a risk of bias judgment for a particular category, a clarification request was emailed to the corresponding author. Seven of the eight corresponding authors were contacted in this way and two responded with the information requested. In all other instances, a score of two (representing the category 'unsure') was retained for the risk of bias rating.

**Effect Size Calculations**

In order to compare the anxiety prevention outcome data of the studies included in this review, standardized effect size (ES) estimates were calculated where possible on the difference between the prevention and control group at each time point available. Cohen's *d* (Cohen, 1988) was transformed into Hedges' *g* (Hedges, 1981) to ensure unbiased conservative estimates. Positive ES estimates indicate that the intervention group improved more than the control group on a given measure. An ES of .20 is generally considered small, whereas an ES of .50 is considered moderate and an ES of .80 is considered large

(Cohen, 1988). Only three of the eight studies included in this review (38%) published the data needed to calculate these effect sizes. Raw mean, standard deviation and sample size data were requested from the corresponding authors of the other five studies, but none was returned.

## Results

The results section first describes key study characteristics (including quality), before reviewing anxiety prevention data and concluding with a brief summary of secondary outcome data. In terms of anxiety prevention data, the focus will be on symptomology rather than diagnosis, because comparable data were available across all studies. Key study details are summarised in Table 1.1 and further programme details can be found in Appendix B.

### Study Characteristics and Quality

All of the eight studies included in this review evaluated anxiety prevention programs based on cognitive-behavioural principles. Five of the eight studies (63%) evaluated the FRIENDS program, which was developed by Barrett, Lowry-Webster and Holmes (1999) and aims to teach children techniques in relaxation, cognitive restructuring, attentional training, parent-assisted exposure and peer support. Three of these studies were conducted in Australia by the program developers (Barrett, Lock, & Farrell, 2005; Lock & Barrett, 2003; Webster, Barrett, & Lock, 2003), one was conducted in Germany (Essau, Conradt, Sasagawa, & Ollendick, 2012) and one was conducted in the UK (Stallard et al., 2014). Two of the other three studies evaluated the Aussie Optimism Program, which was developed by Rooney, Pike and Roberts (2000) and aims to teach children to identify and challenge negative thoughts and feelings about the self, current life circumstances and the future. Both of these trials were conducted in Australia by the developers (Roberts et al., 2010; Rosanna Rooney, Hassan, Kane, Roberts, & Nesa, 2013). The remaining study evaluated the E-COUCH program, which was developed by Calear, Christensen, Griffiths and Mackinnon (2013) and aims to teach children cognitive behavioural techniques and relaxation. This trial was conducted in Australia by the program developers (Calear et al., 2016). Only the E-COUCH program was delivered online. Teachers delivered the interventions in three of the studies (38%), health professionals delivered the interventions in another three of the studies and two of the studies compared teacher and health professional delivery.

The eight studies included in this review cover an age range of nine to 18 years (although the focus of most of the studies was on primary school aged children). Slightly

more female than male participants were recruited into most of the studies. Sample sizes ranged from 496 to 1767 participants when the trial began, totalling 7522 children across all studies. In terms of fidelity, five of the eight studies (63%) assessed randomly chosen sessions, two studies relied upon facilitator 'self-report' and Calear et al. (2016) used computer activity logs because the program was delivered online. Six of the eight studies (75%) included a follow-up measure at 12-months, two included a follow-up measure at 18-months, one included follow-up at both 24 and 36-months, and one included follow-ups at 30, 42 and 54-months.

Table 1.2 indicates that the eight studies included in this review generally suffer from high risk of bias. The studies conducted by Stallard et al. (2014) and Rooney et al. (2013) yielded the lowest risk of bias (both scoring 11/21), whereas the studies conducted by Barrett et al. (2005), Lock and Barrett (2003) and Lowry-Webster et al. (2003) each yielded the highest risk of bias scores (17/21). Attritions rates were generally less than 20%, with the exception of Essau et al. (2012) and Calear et al. (2016) where the attrition rates were 52% and 61% respectively (yielding reduced sample sizes of 309 and 687 respectively at the 12-month follow-up). Only the two most recent studies included a clear power analysis (Calear et al., 2016; Stallard et al., 2014). None of the studies included in this review included an intervention control group.

Table 1.1

*Overview of the Eight Studies Included in this Review*

| ***Study*** | ***Program & country*** | ***Focus*** | ***N*** | ***Age & gender*** | ***Delivery*** | ***Sessions*** | ***Hrs*** | ***Key measures*** | ***Control*** | ***LT follow up(s)*** | ***LT attrition*** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Barrett et al. (2005)** | FRIENDS, Australia | Anxiety | 692 | 9-10 & 14-16 (51% male) | Face-to-face (MHP) | 10 child, 2 booster, 4 parent | 18 | SCAS CDI | NI | 12m | 18% |
| **Calear et al. (2016)** | E-COUCH, Australia | Anxiety | 1767 | 12-18 (31% male) | Online (T v MHP guided) | 6 child | 3.5 | SCAS-GAD SAS-A GAD-7 CES-D | WL | 12m | 61% |
| **Essau et al. (2012)** | FRIENDS, Germany | Anxiety | 638 | 9-12 (54% male) | Face-to-face (G) | 10 child, 2 booster, 4 parent | 14 | SCAS RCADS | WL | 12m | 52% |
| **Lock & Barrett (2003); Barrett et al. (2006)** | FRIENDS, Australia | Anxiety | 977 | 9-10 & 14-16 (50% male) | Face-to-face (MHP) | 10 child, 2 booster, 4 parent | 18 | SCAS RCMAS CDI | WL | 12m 24m 36m | 13% |
| **Lowry- Webster et al. (2003)** | FRIENDS, Australia | Anxiety | 594 | 10-13 (47% male) | Face-to-face (T) | 10 child, 2 booster, 3 parent | 15 | SCAS RCMAS CDI | WL | 12m | 21% |
| **Roberts et al. (2010)** | AOP-PTS, Australia | Anxiety & depression | 496 | 11-13 (46% male) | Face-to-face (T) | 20 child | 20 | RCMAS CDI | NI | 18m | 12% |
| **Rooney et al. (2013a,b); Johnstone et al. (2014)** | AOP-PTS, Australia | Anxiety & depression | 910 | 9-10 (51% male) | Face-to-face (T) | 10 child | 10 | SCAS CDI | NI | 18m 30m 42m 54m | 14% |
| **Stallard et al. (2014)** | FRIENDS, UK | Anxiety | 1448 | 9-10 (46% male) | Face-to-face (T v MHP) | 9 child | 9 | RCADS | AC + NI | 12m | 8% |

**Delivery:** MHP = Mental Health Professional; T = Teacher; G = Graduate student. **Measures**: SCAS = Spence Children's Anxiety Scale; GAD = Generalized Anxiety Disorder; RCADS = Revised Children's manifest Anxiety Scale; CDI = Children's Depression Inventory; SASA = Social Anxiety Scale for Adolescents ; CESDS = Centre for Epidemiological Studies Depression Scale; RCMAS = Revised Children's Manifest Anxiety Scale. **Control**: WL = Wait-List Control; NI = No Intervention Control; AC = Active Control

Table 1.2

*Risk of Bias Summary*

| *Study* | *A* | *B* | *C* | *D* | *E* | *F* | *G* | *Total (min = 7, max =21)* |
|---|---|---|---|---|---|---|---|---|
| **Barrett et al. (2005)** | 2 | 2 | 3 | 2 | 3 | 2 | 3 | **17** |
| **Calear et al. (2016)** | 1 | 1 | 3 | 1 | 3 | 3 | 3 | **15** |
| **Essau et al. (2012)** | 2 | 2 | 3 | 1 | 3 | 2 | 3 | **16** |
| **Lock & Barrett (2003)** | 2 | 2 | 3 | 2 | 3 | 2 | 3 | **17** |
| **Lowry-Webster et al. (2003)** | 2 | 2 | 3 | 2 | 3 | 2 | 3 | **17** |
| **Roberts et al. (2010)** | 2 | 2 | 3 | 2 | 3 | 1 | 3 | **16** |
| **Rooney et al. (2013a** | 1 | 1 | 1 | 1 | 3 | 1 | 3 | **11** |
| **Stallard et al. (2014)** | 1 | 1 | 1 | 1 | 3 | 1 | 3 | **11** |

A = Random sequence generation; B = Allocation concealment; C = Incomplete outcome Data; D = Selective reporting; E = Blinding of participants and personnel; F = Blinding of outcome assessment; G = Other sources of bias; *1 = low risk; 2 = unclear; 3 = high risk*

## Long-term Anxiety Prevention Effects

A formal meta-analysis was not conducted because of the relatively small number of studies included in this review and also the high risk of bias present in most of these studies. Table 1.3 provides an overview of the key anxiety prevention effects for each study[1]. Three of the eight studies included in this review reported greater reductions in anxiety symptomology in the prevention group compared to the control group at post-intervention (immediate effect) and each of these studies also reported maintenance of this effect at 12-months follow-up. Two studies reported limited or no immediate effect with a

[1] The effect sizes provided in parentheses are for the difference between the prevention and control group at each time point. Only three of the studies (38%) provided sufficient information to calculate relevant estimated effect sizes.

'delayed' effect at 12-months follow-up. Estimated effect sizes at 12-months follow-up varied from 0.2 to 0.69 (*Hedges g*) and these effects were reported for the SCAS for four studies and the RCADS for one study. Only one of these studies reported an anxiety prevention effect beyond 12-months and this was limited to the younger of the two age groups recruited. The other three studies reported no post-intervention or longer-term effects.

Although it was not possible to conduct a meta-analysis analysis of whether prevention outcomes were associated with particular study characteristics, it is worth noting that each of the five studies that reported a prevention effect at 12 months was evaluating the FRIENDS program (two of these studies were conducted outside of Australia by researchers not involved in the development of the program). However, an important caveat is that four of these studies were deemed to have high risk of bias (scores of 16 or 17/21). Each of the five studies reporting anxiety prevention effects at 12 months provided approximately ten child sessions, but it is worth noting that Stallard et al. (2014) reported prevention effects (albeit with a small effect size) without the use of parent or child booster sessions. Essau et al. (2012) explored parental attendance at allocated sessions and reported that this did not influence anxiety prevention data.

Long-term prevention effects were generally more likely to be reported by studies that evaluated delivery by health professionals/graduates than teachers and Stallard et al. (2014) found significant long-term prevention effects only when delivered by health professionals (not teachers). However, one study (Lowrey-Webster et al., 2003) did report 12-month prevention effects using teacher delivery. In terms of the total number of intervention hours provided, the studies reporting long-term prevention effects ranged from nine to 18 hours, with slightly larger effect sizes reported by the studies providing more intervention hours. However, a high number of intervention hours was not sufficient to yield long-term prevention effects (cf. Roberts et al., 2010). Results did not differ according to sample size or control type.

Table 1.3

*Anxiety Prevention Outcomes (effect sizes in parentheses)*

| ***Study*** | ***Summary*** | ***Post-intervention*** | ***12m*** | ***>12m*** |
|---|---|---|---|---|
| **Barrett et al. (2005)** | Only at 12m was a significant difference found between the IG and CG (for both age groups recruited). | N.S | Sig effect[a] | - |
| **Calear et al. (2016)** | No significant differences were found between the CG and either the teacher-led IG or the health professional-led IG at any time point. | N.S | N.S | - |
| **Essau et al. (2012)** | Reductions in anxiety symptoms were significantly greater in the IG than the CG for all children at 12m (only for younger children at post-intervention) | Sig effect for younger children[a] | Sig effect (.69) | - |
| **Lock & Barrett (2003)** | Reductions in anxiety symptoms were significantly greater in the IG than the CG at post-intervention and 12m for both age groups (maintained at 24m and 36m for the younger children only). | Sig effect[a] | Sig effect[a] | Sig effect for younger children at 24m & 36m [a] |
| **Lowry-Webster et al. (2003)** | Reductions in anxiety symptoms were significantly greater in the IG than the CG at post-intervention and 12m. | Sig effect (.45) | Sig effect (.53) | - |
| **Roberts et al. (2010)** | No significant differences found between the IG and the CG at any time point. | N.S | - | N.S at 18m |
| **Rooney et al. (2013)** | Same as above. | N.S | - | N.S at 18m, 30m, 42m & 54m |
| **Stallard et al. (2014)** | Reductions in anxiety symptoms were significantly greater in the health professional-led IG than the CG at 12m (not for the teacher-led IG). | - | Sig effect for MHP IG (.20) | - |

N.S = non-significant effect; [a] = ES could not be calculated; IG = intervention group; CG = control group; MHP = mental health professional

Three of the studies reporting 12-month anxiety prevention outcomes compared effects for different aged children. Barrett et al. (2005) and Lock and Barrett (2003) compared the effects for children aged 9-10 and 14-16. Although significant effects were reported for all children, slightly greater reductions in anxiety were reported by both studies for the younger children at 12-month follow-up. Essau et al. (2012) reported a mixed picture with greater reductions in anxiety for the 9-10 year olds at post-intervention,

but greater reductions in anxiety for the 11-12 year olds at 12-month follow-up. In terms of gender, one study (Lock & Barrett, 2003) reported that reductions in anxiety over time in the intervention group were greater for females than males. Another study (Barrett, Farrell, Ollendick, & Dadds, 2006) reported that longer-term anxiety prevention effects stopped by 36 months for females, but were maintained at 36 months for males.

In terms of the three studies that failed to find immediate or long-term anxiety prevention effects, two of these were evaluating the Aussie Optimism Program (AOP) and one was evaluating the E-COUCH program. Given the small number of studies included in this review, it is difficult to offer explanations as to why these studies failed to report long-term anxiety prevention effects. However, it is worth noting that in contrast to the FRIENDS program (where the focus is entirely on anxiety prevention), AOP has a dual focus on anxiety and depression prevention. Both of the AOP studies also evaluated delivery by teachers, whereas most of the FRIENDS studies evaluated delivery by external health professionals or graduates. E-COUCH is unique in the sense that it is the only program included in this review delivered online, and the total intervention hours provided by E-COUCH was also considerably lower than the other studies in this review.

### Long-term Secondary Prevention Effects

Two of the five studies included in this review that reported long-term anxiety prevention effects also reported long-term secondary effects. Essau et al. (2012) and Lock and Barrett (2003) reported a significant prevention effect for depression at 12-months follow-up. Essau et al. (2012) also reported significant prevention effects for school-based performance and perfectionism at 12-months follow-up. However, three of the five studies included in this review that reported long-term anxiety prevention effects did not find evidence for long-term secondary prevention effects. None of the studies that failed to find a long-term anxiety prevention effect reported long-term secondary effects. Despite having a dual focus on depression-prevention, the two studies evaluating the AOP also failed to find effects on mood-related measures.

## Discussion

This systematic review is the first to focus exclusively on the longer-term effectiveness of universal school-based anxiety prevention programs. Eight studies evaluating randomised controlled trials (RCTs) with a follow-up at 12-months or beyond were identified, totalling 7522 children aged nine-eighteen years (although several of the studies focused on primary aged children). Each of these studies was evaluating a program based on cognitive-behavioural principles (broadly including psycho-education, relaxation,

attention training, behavioural experiments and cognitive restructuring). Although this was not an eligibility requirement, no RCT studies evaluating programs based on other models (e.g., exercise or education alone) could be found that included follow-up periods of 12-months or beyond.

The hypothesis that a small effect size would be found at 12-month follow-up for the majority of studies included in this review was largely supported, with five out of the eight studies reporting significant anxiety prevention effects at the 12-month follow-up (Barrett et al., 2005; Essau et al., 2012; Lock & Barrett, 2003; Lowry-Webster et al, 2003; Stallard et al., 2014). Overall, the largely descriptive results from this review extend the short-term universal school-based anxiety prevention effects reviewed by Neil and Christensen (2009) and also support the tentative conclusions drawn by more recent broader-ranging reviews that anxiety prevention effects of universal school-based programs can last beyond six months (Stockings et al., 2016; Werner-Seidler et al., 2017). However, each of the five studies reporting long-term prevention effects was evaluating the FRIENDS program, whilst the other three studies included in this review evaluating the AOP and the E-COUCH program failed to find immediate or longer-term anxiety prevention effects (Calear et al., 2016; Roberts et al., 2010; Rosanna Rooney et al., 2013). This suggests that the effectiveness of universal school-based anxiety prevention programs may well be program-dependent.

It is hoped that this review will be useful for public health policy makers in assessing the longer-term effects of universal school-based anxiety prevention programs. For example, although some of the 12-month follow-up effect sizes are small (ranging from 0.20 to 0.69), such changes in the trajectory of anxiety symptomology in school-aged children could have wide-ranging benefits if scaled up to population estimates (Nehmy & Wade, 2014). However, it is important to highlight that the current review found no reliable evidence suggesting that effects endure beyond 12-months. It is also important to highlight that only two studies reported delayed effects at the 12-month follow-up that were not present at post-intervention. Therefore it is unlikely that previous reviews that have relied largely on studies with only short-term follow-up periods have been drastically underestimating the potential longer-term benefits of universal school-based anxiety prevention programs (Christensen & Neil, 2009).

The current review cannot draw firm conclusions regarding the influence of delivery mode or program content, but each of the five studies that reported long-term prevention effects was evaluating the FRIENDS program (Barrett et al., 1999). It is encouraging that two of these trials were conducted outside of Australia by researchers not

involved in the development of the program. The results from one of these studies (Stallard et al., 2014) suggests that external delivery by health professionals may yield better outcomes than internal delivery by teachers. This study also reported 12-month prevention effects without the provision of parent sessions. Previous research is mixed regarding the additive benefit of involving parents in cognitive behavioural treatment (Breinholst, Esbjørn, Reinholdt-Dunne, & Stallard, 2012) and Essau et al. (2012) found that parent attendance at designated sessions did not impact upon child prevention outcomes. Stallard et al. (2014) also reported a 12-month prevention effect without child booster sessions, suggesting that adding these on a yearly basis may be sufficient. Further controlled research will be needed to compare different parent and child booster session options.

Results from a another study included in this review (Barrett et al., 2006) suggest that anxiety prevention effects may last longer in younger than older children. Indeed, a previous meta-analysis conducted by Tebert and Pinquart (2011) indicated that anxiety prevention programs are generally less effective for older adolescents. Nehmey and Wade (2014) suggest that programs like FRIENDS, which are largely targeted at primary school children, may need to be adapted for older secondary age children. The current review is not able to draw conclusions regarding the use of online computer technology as a delivery mode because only one study of this nature was included in this review (and reported no immediate or prevention effects).

Finally, few explanations can be offered as to why three of the eight studies included in this review failed to find immediate or long-term anxiety prevention effects. However, this review does raise the interesting question as to whether part of the reason the FRIENDS program yielded better results than the AOP program might be because FRIENDS has a primary focus on anxiety prevention whereas AOP has a dual focus on anxiety and depression prevention. Perhaps further research would benefit from testing whether anxiety-specific prevention programs yield better effects than dual-focus or trans-diagnostic programs.

**Limitations and Conclusions**

The results of this review need to be taken with some caution due to a number of limitations. The first is the small number of studies that met eligibility criteria and also the high risk of bias apparent in most of these studies. Secondly, it is a significant limitation that a meta-analysis could not be conducted on the data, meaning few conclusions can be drawn regarding the influence of different factors (e.g., program content, delivery mode) on long-term anxiety prevention outcomes. Further high quality RCTs are needed to

address the methodological and theoretical questions raised throughout this review. Recent studies in this field have begun to reduce possible sources of bias and have published protocols in advance of the trial (Calear et al., 2016; Stallard et al., 2014), thus allowing for transparent inspection of the data and thorough assessment of study quality. However, it is also worth noting that the results of this review are a product of the inclusion criteria employed. It is possible that different results may have been found if uncontrolled trials had been included, and this may have also resulted in the inclusion of studies evaluating programs based on non-cognitive behavioural models (such as exercise or education alone). As it stands, this review is limited to programs based on cognitive-behavioural principles. Further research may be needed to compare this with other approaches to universal school-based anxiety prevention (see Stockings et al, 2016). Finally, it is also worth noting that the focus of this review was on anxiety symptomology data (rather than diagnosis), because comparable data were available across studies. Further larger-scale research will also need to consider the long-term impact of universal school-based anxiety prevention programs on diagnosis, which will help inform an economic evaluation.

However, notwithstanding the limitations noted above, this review can conclude that the FRIENDS program appears to yield anxiety prevention effects lasting up to 12-months post-intervention when delivered universally in schools (especially if delivered by external health professionals or graduates). This is encouraging, and although effect sizes were small-moderate (ranging from 0.20 to 0.69), could have substantial societal benefits if scaled up to a population level (Nehmy & Wade, 2014). As with recent broader-ranging meta-analyses (Werner-Seidler et al., 2017), this systematic review also suggests that further high quality RCTs are needed before firm conclusions can be drawn regarding the long-term effectiveness of universal school-based anxiety prevention programs.

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# Service Improvement Project

## *Routine Outcome Monitoring in CAMHS: How Can We Enable Implementation in Practice?*

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**Abstract**

*Background*: Many Child and Adolescent Mental Health Services (CAMHS) across the UK are beginning to use Routine Outcome Monitoring (ROM). However, clinician concerns and practical issues often hinder implementation. *Method*: This study surveyed the experiences of 20 clinicians from a large urban CAMHS network at the beginning and end of an initial six-month ROM implementation period to explore implementation barriers and generate improvement ideas. Ten interviews pertaining to five different cases were also conducted allowing for the triangulation of clinician and service user perspectives on the use of ROM in each case. *Results*: Clinicians and service users were generally more positive than negative about ROM, and clinicians who used ROM more also tended to value it more. Clinicians' use of ROM increased significantly over the implementation period, but corresponding attitudes towards ROM did not change. Key implementation challenges included clinician concerns about the value and use of ROM data, poor technological support and competing priorities. *Conclusions*: Exploring challenges raised by clinicians and service users at the early stages of ROM implementation can help provide a focus for improvement efforts. Ideas for future research and important limitations of the study are discussed.

**Key words:** CAMHS, Routine Outcome Monitoring, Implementation, Service Development

**Practitioner message**

- CAMHS teams continue to face a number of challenges implementing Routine Outcome Monitoring (ROM)
- Evaluating clinician and service user experiences of using ROM during an initial implementation period can help identify specific challenges, which can be translated into improvement ideas
- CAMHS teams cannot assume that clinician concern and practical issues associated with ROM will fade purely as a product of using ROM more
- Activities such as training may be needed to support the implementation process

## Introduction

Recent years have seen a significant shift towards the recommendation of Routine Outcome Monitoring (ROM) in UK and international mental health policy (DoH, 2011). ROM is the "*detailed evaluation of the impact of treatment on areas of a client's functioning that are of clinical relevance*" (Johnston & Gowers, 2005, p.133). Following the adult Increasing Access to Psychological Therapies program (Clark, 2011), ROM is now also a key feature of the Children and Young People's Increasing Access to Psychological Therapies (CYP-IAPT) transformation (Law & Wolpert, 2014). Some of the patient-reported CYP-IAPT measures focus on symptoms and functioning (e.g., the Revised Child Anxiety and Depression Scale), whilst others focus on goal setting/monitoring (e.g., the Goal Progress Outcome form) and session feedback (e.g., the Session Rating Scale). A common CYP-IAPT clinician-reported measure is the Current View, where the clinician records perceived change in symptoms/functioning over time.

The rationale for using ROM is that it increases service user participation in treatment and provides a practice-based method of evaluating interventions (Mellor-Clark, Cross, Macdonald, & Skjulsvik, 2016). Several (but not all) randomised controlled trials have demonstrated better mental health outcomes when clinicians are provided with regular service user feedback (see Gondek, Edbrooke-Childs, Fink, Deighton, & Wolpert, 2016 for a recent review). Researchers have drawn on Feedback Intervention Theory (Kluger & DeNisi, 1996) to explain these results, arguing that clinicians adapt their intervention according to the feedback they receive from the service user (de Jong, 2016).

However, substantial variation in the implementation of ROM has been reported across child mental health services over the last decade (Hall et al., 2013) and studies have highlighted philosophical issues (such as clinician concerns regarding the value of ROM) and practical challenges (e.g., lack of technological support). A strong theme highlighted by Boswell, Kraus, Miller and Lambert (2015) was clinician views of the relevance and utility of ROM. Indeed, key to most theories of systemic change are the foundational blocks of stakeholder 'buy-in' (Iles & Sutherland, 2001). For example, if individual clinicians do not feel that ROM adds value to their practice, implementation tends to be low with little effect on outcomes (de Jong, van Sluis, Nugter, Heiser, & Spinhoven, 2012; Gleacher et al., 2016).

Research exploring clinician and service user views of ROM is limited in the context of CAMHS (Batty et al., 2013), but Moran, Kelesidi, Guglani, Davidson and Ford (2011) reported that some parent/carers were concerned that more was needed than a simple 'tick-box exercise'. Stasiak et al (2013) reported that young people felt the most

important factor to their acceptance of ROM was how it was introduced and discussed by the clinician (e.g., a therapeutic relationship should be developed first and the timing of feedback is important). In a survey of management and lead CAMHS clinicians, Johnston and Gowers (2005) reported that staff resistance was the key barrier to implementation. Indeed, Hall et al (2013) have pointed to an array of wider clinician concerns, including the time it takes to administer ROM, perceptions of 'irrelevance' and concerns with the idea of labelling mental health problems in line with a medical approach.

James, Elgie, Adams, Henderson and Salkovskis (2015) recently developed a useful questionnaire for measuring clinican attitudes to ROM in the context of CAMHS. They generated six statements that captured 'positive' beliefs and six statements that captured 'negative' beliefs about ROM. Researchers and clinicans can use this questionnaire to assess which statements are most endorsed by clinicians, and compare the positive and negative sub-scales. Their preliminary study using this questionnaire suggested that CAMHS clinicians using ROM tend to hold stronger positive and negative beliefs about ROM than clinicians not using ROM.

Given the potential benefits of ROM, and the implementation issues described above, the main aim of this study was to evaluate clinician and service user views and experiences of using ROM in a large UK CAMHS network during an initial implementation period. The overarching objective was to highlight barriers to implementation and to generate potential solutions to these. The research questions, addressed via a clinician survey and a small number of case interviews were a) how do clinician use and attitudes towards ROM change during an implementation period? b) what are the key barriers to implementation? and c) what are the similarities and differences between clinician and service user experiences of using ROM? Although ROM implementation guidance had already been circulated to clinicians in the service and a local ROM champion had been identified in each of the four network teams, the need for this project arose out of service concerns that implementation would be problematic. Clinicians were being asked by management to start implementing ROM (as a result of receiving CYP-IAPT funded training), and a number of team members opposed the initiative and felt it was a top-down agenda that they had not been consulted on. Therefore, one of the key aims of this project was to explore negative (as well as positive) views of ROM and consider how this might influence practice.

## Method

### Participants

All of the clinicians that were expected to start using ROM across the four CAMHS teams (N = 60) were invited to take part in the survey by email and post. A sub-set of 11 clinicians drawn from one of the four teams was also invited to nominate one case each where both the service user and clinician could be interviewed about their experience of using ROM. Informed consent was sought for all participants and identifiable information has been removed from this publication. Ethical approval was granted from the University of Bath Psychology Department ethics committee. Local R&D decided that the project came under the category of 'service evaluation', and so NHS ethical approval was not required (see Appendix D).

### Materials and Procedure

**Clinician survey.** The survey was designed to assess clinician beliefs and experiences of using ROM, and it was administered at the beginning and end of the initial six-month implementation period (with individual clinician responses being matched across the two time points). Part 1 of the clinician survey was composed of the twelve items from the James et al (2015) ROM beliefs questionnaire found to load onto the 'positive' and 'negative' sub-scales. Each item is presented in the form of a statement (e.g., "ROM wastes time in session", "ROM has some value for clinicians") and the respondent is required to use a Likert scale to record the extent to which they endorse each statement (1 = not at all, 3 = somewhat, 5 = totally). James et al (2015) reported a Cronbach's alpha of .94, suggesting good internal consistency when used with CAMHS clinicians. Part 2 of the survey asked clinicians to provide open-text answers to questions about their experiences of using ROM over the implementation period (see Appendix E for a copy of the clinician survey and corresponding information sheet and consent form).

**Case interviews.** Only cases where at least six sessions had already taken place and ROM had been used at least twice were considered for interview. All semi-structured interviews were undertaken by SW, lasted approximately 20 minutes and covered the following themes: perceived usefulness of the ROM measures used in that case; practical details regarding when and how the ROM measures were used; and recommendations or improvement ideas (see Appendix F for a copy of the generic interview questions). The clinician was always interviewed first, followed by either the young person (if aged 12 or over) or the parent/carer (if the child was under the age of 12). See Appendices G and H for corresponding adolescent and parent information sheets and consent forms. Some of the interviews were conducted face-to-face and some were conducted via telephone

(depending on participant availability). The interviews were not recorded or transcribed (meaning direct quotes could not be extracted), but detailed field notes were taken during all interviews. A £5 gift voucher was awarded to each of the service users that took part in interviews as a token of appreciation.

### Data Analysis Plan

Initial data screening and assumption tests were undertaken (missing data was not an issue). To assess for changes in clinician use of and attitudes towards ROM over time, a series of paired *t*-tests and Wilcoxon signed rank tests were planned for the pre-post survey data. Correlational analyses were also planned to check for associations between clinician use of ROM and clinician attitudes towards ROM. To assess key barriers to ROM implementation, an inductive, semantic, realist thematic analysis was planned following Braun and Clarke (2006) to examine the qualitative data generated by the clinician survey via an iterative process of identifying themes and coding responses accordingly (see Results section for further details). To assess similarities and differences in clinician and service user experiences of using ROM, triangulation of the data provided by the clinician and service user case interviews was planned (examining areas of agreement and disagreement for each case).

## Results

### Sample Demographics

Twenty clinicians took part in the survey (30% response rate) and 19 re-participated six-months later. This sample included 11 Clinical Psychologists (55% of total sample), two Family Therapists, two CAMHS Nurses, two Psychiatrists, one Psychotherapist, one Occupational Therapist and one Primary Mental Health Specialist. Clinical Psychologists were disproportionately over-represented in the sample, which needs to be considered when interpreting the results of these data[2]. The mean age of the clinician survey respondents was 49 years (range: 30-65), the mean number of years working in CAMHS was 13 (range: 2-35), and 75% of the sample were female and 40% had received some form of IAPT training.

Five suitable cases were identified for the clinician and service user interviews, representing a variety of presenting problems (including low mood, anorexia, anxiety and challenging behaviour). For three of these cases, the young person (plus clinician) was interviewed. For the other two cases, the mother (plus clinician) was interviewed. Three of

[2] Of all of the clinicians expected to start using ROM across the four teams, approximately 30% were Clinical Psychologists. Therefore having 55% in the survey sample indicates an over-representation.

the clinicians interviewed were Clinical Psychologists, one was a Family Therapist and one was a Psychiatrist.

**Clinician Use and Attitudes towards ROM (changes over time)**

All of the 20 clinicians that took part in the survey were asked to rate the extent to which they generally used ROM on a Likert scale (1 = never, 3 = sometimes, 5 = almost always). Average scores increased from 3.4 (standard deviation = 1.07) at the start of the initial implementation period to 3.8 (standard deviation = 1.01) six months later. A non-parametric Wilcoxon signed rank test revealed this to be a significant increase, $Z$ =1.999, $p$ =.046. Several clinicians reported that they had started to feel more confident in administering ROM by the end of the initial implementation period. All respondents were also asked to list which ROM measures they were using in an open-text format. Table 2.1 provides an overview of these data at the beginning of the implementation period. No reliable changes were observed in the use of particular ROM measures over time.

Table 2.1

*Proportion of Clinicians Using Different ROM at the Beginning of the Initial Implementation Period*

| | |
|---|---|
| RCADS | 70% |
| Goal Outcome Form | 55% |
| Session Rating Scale | 55% |
| Specific symptom trackers | 20% |
| Outcome Rating Scale | 20% |
| Current View | 20% |

All of the clinicians who took part in the survey were also asked to rate the extent to which they endorsed each of the twelve statements taken from the ROM beliefs questionnaire developed by James et al. (2015). Cronbach's alpha was calculated as .93, demonstrating good internal consistency in the current sample (very similar to that reported by James et al., 2015). Figure 2.1 provides an overview of the average clinician endorsement for each of the 12 items at both the beginning and end of the initial implementation period (1 = not at all, 3 = somewhat, 5 = totally). The most endorsed statement was "ROM has some value for clinicians" and the least endorsed statement was "ROM wastes time in sessions".

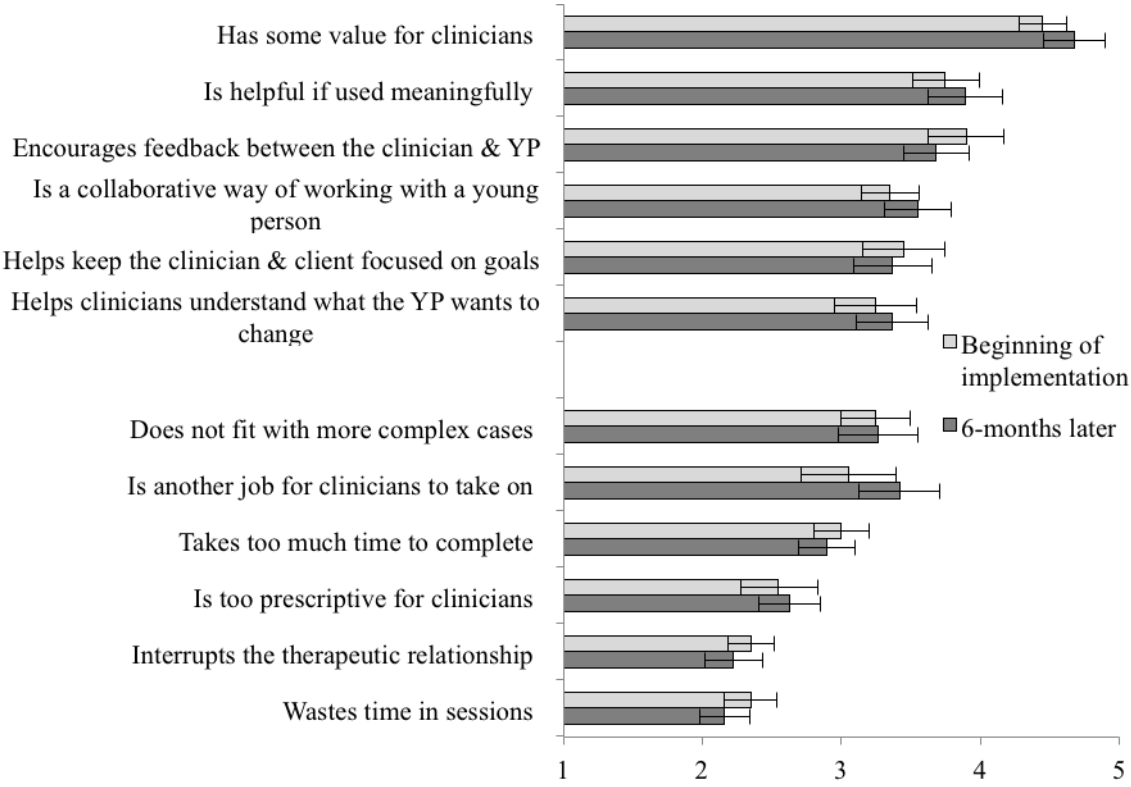


*Figure 2.1.* Average clinician endorsement of individual statements at the beginning and end of the initial ROM implementation period (1 = not at all; 3 = somewhat; 5 = totally)

None of the changes in individual item scores over time were found to be significant using Wilcoxon signed rank tests. It is worth noting however, that the largest (non-significant) change was the increased endorsement of the item "ROM is another job for clinicians to take on" (rising from an average score of 3.15 to an average score of 3.42). This suggests that some of the respondents may have perceived the introduction of ROM as an added pressure, on top of an already busy workload.

For each clinician, a positive and negative sub-scale score was calculated by dividing the total score for all combined sub-scale items by the number of subscale items. Figure 2.2 shows a higher positive than negative sub-scale score, and paired parametric *t*-tests revealed this difference to be significant at the beginning, $t(18) = 2.57$, $p<.05$, and end of the initial implementation period, $t(18) = 2.69$, $p<.05$. No significant differences were found for either subscale score over time, indicating that clinicians did not become more positive or negative about ROM during the implementation period.

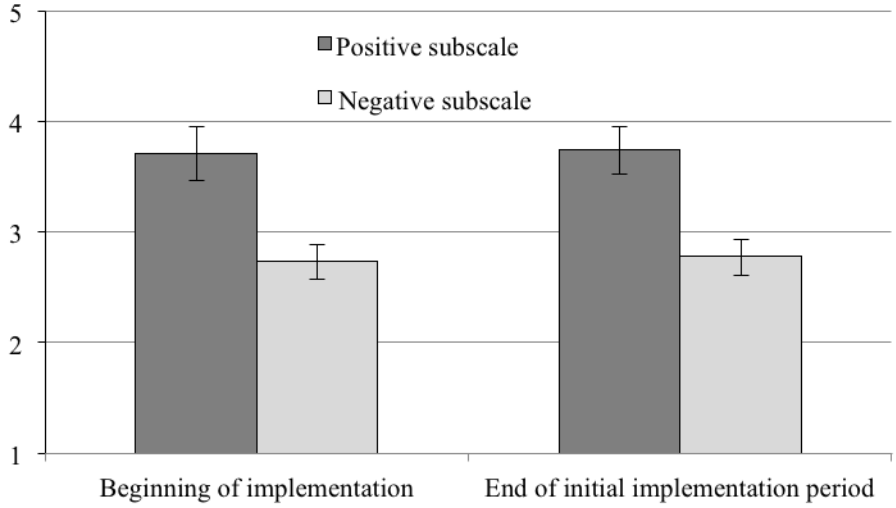


*Figure 2.2*. Average clinician ROM attitude sub-scale scores

Bivariate correlational analyses revealed that clinicians who used ROM more also tended to hold more positive beliefs about ROM, and this was true at the beginning, $r(19) = .74$, $p < .001$, and end of the implementation period, $r(19) = .60$, $p < .05$. Similarly, clinicians who used ROM more tended to hold less negative beliefs about ROM at the beginning, $r(19) = -.79$, $p < .001$, but not at the end of the implementation period, $r(19) = -.424$, $p > .05$, perhaps due to experiencing associated costs with using ROM more over time. There were no significant correlations between changes in use of ROM and changes to either the positive or negative ROM attitude subscale scores over time, indicating that changes in attitudes towards ROM were not greater for those clinicians that exhibited the greatest changes in use of ROM.

**Key Barriers to ROM Implementation**

All of the clinicians that took part in the survey were also given the opportunity feedback their views and experiences of using ROM during the six-month implementation period. Tables 2.2 and 2.3 provide an overview of the key themes that emerged from the inductive, semantic, realist thematic analysis on these data. This aims to provide the reader with an overall description of the data-set, highlighting predominant themes. The themes identified and coded were a reflection of the entire data-(sub)set. Some depth and complexity is lost, but an overall description is maintained. Braun and Clarke (2006) state that this is appropriate when the participant's views on a topic are not known. It was inductive in the sense that the 'bottom-up' themes identified were strongly linked to the data and not driven by theoretical interest in the topic. Data coding was also undertaken without trying to fit it to a pre-existing frame or analytic preconception (although the

researcher can never be entirely objective). It was semantic in the sense that the themes were identified within the explicit or surface meanings of the data, and the analysis did not look beyond what the participant reported. It was realist in the sense that a simple and unidirectional relationship was assumed between meaning and language.

Table 2.2

*Key Themes Regarding Positive Clinician Experiences of ROM*

| | **Proportion of clinicians mentioning each theme** |
|---|---|
| Helps keep focus on shared goals | 50% |
| Helps monitor change/progress | 45% |
| Aids assessment/conversation | 30% |
| Provides valuable feedback from the service user | 25% |
| Enhances clarity for the service user | 20% |
| Often empowers the service user | 20% |
| Provides structure/uniformity | 15% |
| Provides useful data for service planning | 10% |

Table 2.3

*Key Themes Regarding Negative Clinician Experiences of ROM*

| | **Proportion of clinicians mentioning each theme** |
|---|---|
| Poor IT support | 35% |
| Difficulties capturing complexity | 35% |
| Lack of time | 30% |
| Doesn’t always feel appropriate | 20% |
| Commissioners may misuse the data | 20% |
| Feels like a top-down directive | 15% |

A number of key findings from the quantitative data reported previously are corroborated (e.g., that clinicians generally feel that ROM helps keep the therapist and service user focused on goals, encourages service user feedback, is not always able to capture complexity, is another job that takes considerable time, and is sometimes felt to be too prescriptive and top-down). The qualitative data summarised in Tables 2.2 and 2.3 also reveal new findings (e.g., that some clinicians think ROM can help in conducting

assessment, technological support is lacking, ROM doesn't always feel appropriate, and there are concerns about how ROM data will be used by commissioners).

**Similarities and Differences between Clinician and Service User Experiences of ROM**

In each of the five cases selected for interview, the service user and clinician were both generally positive about their experience of using ROM. Indeed, in three of the five cases, the clinician and service user agreed that ROM had helped the therapist to understand the service user's needs, focus on their goals and track change. In terms of introducing the concept of ROM, there was agreement in all cases that this was best done by the clinician in session. Clinicians generally reported explaining ROM as a means of goal-setting and progress-tracking, and service users seemed to understand the rationale and saw value in it. All service users and clinicians in each of the five cases agreed that it only took a few minutes for ROM to be explained sufficiently.

In terms of administering ROM, the service users and clinicians also generally agreed that this was best done in session, although four of the clinicians raised concerns that administering the Session Rating Scale in session felt awkward (however this was not raised as a concern by any of the service users). Interestingly, service users were also much less likely than clinicians to report that the use of ROM had negatively affected the 'therapeutic alliance' (in three of the five case cases the clinician had reported this perception but the service user had not). Generally speaking, the young people and clinicians had less of an emotional reaction to the administration of ROM than the parents (two of which reported feeling anxious and upset when completing ROM measures about their child). One parent felt that they had sometimes been given too many ROM measures to complete at once.

In terms of discussing the ROM results, all service users and clinicians agreed that this was best done with the clinician in session (most clinicians and service users agreed that between five and ten minutes was sufficient). In three of the five cases however, the service user reported that they felt there had not been sufficient opportunity to discuss the results of the questionnaires in session. This had not been raised as a concern by the clinician in any of these cases, thus indicating some discrepancy.

**Summary of Key Findings and Generation of Improvement Ideas**

Table 2.4 provides a summary of the key ways ROM was found to be working well alongside the key challenges identified, integrating both the qualitative and quantitative data presented above.

Table 2.4

*Key ways ROM was Found to be Working Well and Key Challenges*

| **Working well** | **Key challenges** |
|---|---|
| Clinicians and service users were generally more positive than negative about ROM | No significant improvement in clinician views of ROM over initial implementation period |
| Increased clinician use of ROM over initial implementation period | Some clinicians still prefer not to use ROM due to concerns regarding what is captured, how data will be used, and perceived negative impact on therapeutic alliance |
| Clinicians who used ROM more also tended to hold more positive views of ROM | ROM doesn't always feel appropriate in complex cases |
| Several clinicians reported becoming more confident in administering ROM as used more | Some clinicians don't use ROM due to lack of time and insufficient technological support |
| Most clinicians and service users felt ROM can aid assessment, goal-setting, conversation and progress monitoring | Several clinicians reported feeling 'awkward' using the Session Rating Scale |
| Young people don't seem phased by ROM | Some service users reported insufficient opportunity to discuss ROM results |
| ROM seems to work best when explained, administered and discussed in session | Some service users reported being given too many ROMs to complete at once |

The key challenges and barriers to implementation were discussed with the CAMHS network development worker and the following improvement ideas were developed in response:

- Reasonable solutions needed for all professional groups (e.g. agreed use of Outcome Rating Scale when deemed more appropriate than symptom-tracker)
- Guidelines regarding when ROM not appropriate to be developed (clinicians to provide ideas to a Clinical Outcomes group)
- Conversation to be sought with commissioners regarding the use of data and context of limitations
- Improvements to use of Session Rating Scale – e.g. use of technology to allow service user option of completing more discreetly (although results still need to be discussed with clinician)
- Technological support more generally to reduce burden on clinicians (e.g., ROMs on tablets)
- Discussion of results with service users (case discussions of where it worked well)
- Training resources to be considered (e.g., CORC free training day)

Finally, the key study findings and improvement ideas were presented by SW for discussion at an annual CAMHS network research day attended by clinicians and managers from each of the four teams (see Appendix I). Feedback from this presentation suggested that the key barriers highlighted were largely representative across the teams, and the suggested improvement ideas were seen as sensible next steps to improving the use of ROM. Specific feedback regarding the utility of this project from the CAMHS network development worker can be found in Appendix J.

## Discussion

Overall, both clinicians and service users were more positive than negative about the use of Routine Outcome Monitoring (ROM) during the initial implementation period under investigation. For example, most clinicians and services users reported that they felt ROM helped with the setting of shared goals, helped consolidate collaborative ways of working and was useful for tracking progress over time. However, key barriers to implementation included clinician concerns (e.g., regarding what is captured, when to use ROM and how the data will be used) and practical issues (e.g., poor technological support, workload constraints and competing priorities). These challenges are not unique to the CAMHS network under investigation here, and are similar to the issues highlighted by previous research in this field (Boswell et al., 2015; Gleacher et al., 2016; Hall et al., 2013;

James et al., 2015; Wolpert, Curtis-Tyler, & Edbrooke-Childs, 2016). It is worth noting that some clinicians held very negative views of ROM, representing what could be described as a 'philosophical clash'. In these instances, little (if any) change was observed over time, either in use of ROM or attitudes towards it. Such negative views (e.g., that ROM is a waste of time and captures little of any value) were more likely to be held by Family Therapists and Psychotherapists in this study, and less so by Clinical Psychologists, Nurses or Psychiatrists. However, the small sample size precludes making assumptions regarding generalisability or representativeness. It may be that different professional identities and training backgrounds play a role in attitudes towards ROM, but further research will be needed to investigate this appropriately. It is likely that considerable effort would need to be invested to effect change in strong opinions such as this.

One novel finding from this study indicates that despite a significant increase in clinician use of ROM during the initial six-month implementation period, no corresponding improvement in clinician attitude towards ROM was observed. Therefore, the reason for the behaviour change (increased use of ROM) was unlikely to be due to changes in attitude, and was more likely to have resulted from management instruction and surveillance (teams were told that their use of ROM would be evaluated month-by-month against specific targets). This suggests that the CAMHS network involved in the current study, and others like it, cannot assume that clinicians will develop more positive attitudes towards ROM simply as a function of using them more. Unlike previous research (James et al, 2015), the current study also found that clinicians using ROM more were generally more positive about it. The reverse was also true. Clinicians holding negative views about ROM tended to use ROM less. This is an important consideration because previous research has demonstrated that if mental health clinicians do not fully ‘embrace’ ROM, then the potential for positive impact can be circumvented (Gleacher et al., 2016).

Indeed, Conceptualised Feedback Intervention Theory (Riemer, Rosof-Williams, & Bickman, 2005) states that clinicians’ belief in the value of service user feedback is key to successful implementation, and De Jong (2016) has recently suggested that changing negative clinician attitudes towards ROM may need to be a first step before implementation. Willis, Deane and Coombs (2009) have demonstrated that video training for clinicians via a workshop exploring the perspectives of service users and clinicians can help improve attitude towards ROM. Similarly, Edbrooke-Childs, Wolpert and Deighton (2016) also recently reported that their use of ‘UPROMISE’ training can improve clinician attitudes towards ROM in CAMHS. Their training, which can be delivered as a single day or over three days, includes a focus on understanding and challenging personal barriers,

understanding how ROM can be useful and meaningful, learning how to collaboratively use ROM, and developing strategies for embedding the use of ROM in practice and supervision.

Another novel element to this study was the triangulation of clinician and service user case interview data. Interestingly, this revealed that clinicians were considerably more likely than service users to report that they thought the use of ROM had negatively impacted on the therapeutic relationship. Boswell et al (2015) state that no studies exist to support this clinician belief, and the current study suggests that clinicians may worry about this more than services users (although the small sample size needs to be taken into account here). Indeed, taking the quantitative and qualitative data from the current study together, service users were found to be generally less concerned by the use of ROM than clinicians, which corroborates previous research in this area (Unsworth, Cowie, & Green, 2012). Broadly speaking, the case interview data also support another emerging conclusion in the literature that what matters most to service users is that ROM is explained, administered and discussed appropriately by the clinician in session (Stasiak et al., 2013; Thew, Fountain, & Salkovskis, 2015).

It is also hoped that this study provides a unique example of how improvement ideas can be generated for a particular service in response to the ROM implementation barriers highlighted at an early stage. This process fits well with recent research conducted by Mellor-Clark et al. (2016), where they have mapped out a useful step-by-step guide to setting up ROM in mental health settings. An overarching conclusion from the current study would concur with the recommendation recently made by Sharples et al (2016), that a balance needs to be struck between uniform implementation of ROM and adequate support for clinicians to find a way to use ROM that works for them.

Further research would benefit from exploring how ROM can be made to work for each professional group, how practical issues can be overcome, and also how ROM data can be used positively by commissioners. Douglas, Button and Casey (2016) have emphasised that ROM needs to be integrated with “clinical values and workflow” to be effective. However, this is not easy to achieve in busy clinical environments with multiple competing demands and a variety of different professional identities and backgrounds (Powell & Davies, 2012).

**Limitations and Conclusions**

The most significant limitation of the current study is the small and potentially biased samples recruited for the clinician survey and the case interviews. Of the 60

clinicians invited to take part in the survey only 20 participated, and Clinical Psychologists were disproportionately over-represented. Outcome monitoring and evidence-based practice often form part of Clinical Psychology training, and so Clinical Psychologists may have biased views on ROM. It is also possible that clinicians with more positive views about ROM were more likely to take part in both the survey and the case interviews. The five clinicians that offered to take part in the interviews may have nominated cases where they felt ROM had worked well. Unfortunately, there was little that could be done to ameliorate these issues because this study was conducted at a time of significant change in the service (undergoing a change in provider) and so many clinicians felt they did not have time to participate.

Another significant limitation is that the case interviews were not recorded or transcribed, meaning no direct quotes could be used. Detailed notes were taken during the interviews, but analysis of full transcripts (with a measure of thematic coding inter-rater reliability) would have provided additional rigor. Finally, limited attention was paid in the current study to what Gleacher et al (2016) called 'facilitating factors', that is factors that helped facilitate clinician use of ROM. Although this study highlights the positive views held by clinicians towards ROM, and the ways in which ROM was being used well, it did not specifically ask clinicians what was helping them to use ROM (e.g., leadership, structural support). This might have been of interest to the wider research community.

However, notwithstanding the limitations highlighted above, it can be concluded that CAMHS teams continue to face a number of challenges implementing ROM (particularly clinician concerns about the value of ROM and practical issues). Importantly, it cannot be assumed that these barriers will fade purely as a function of using ROM more. Evaluating clinician and service user experiences of using ROM during an initial implementation period might help identify specific challenges, which can then be translated into improvement ideas.

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# Main Research Project

## *Dispositional Mindfulness and its Relationship to Distress and Functioning in Adolescents with and without Chronic Pain*

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Target Journal: Pediatric Psychology (see Appendix K)

**Abstract**

*Objective*: Dispositional mindfulness is the tendency to pay attention to present-moment awareness without judgment. The main aim of this cross-sectional study was to investigate whether dispositional mindfulness accounts for unique variance in distress and functioning in adolescents with and without chronic pain. *Method*: 54 adolescents seeking help for chronic pain and 94 adolescents from the general population completed the same battery of measures including the Child and Adolescent Mindfulness Measure of dispositional mindfulness (CAMM). *Results*: As predicted, dispositional mindfulness accounted for unique variance in mood and anxiety in both groups and also the combined data-set after controlling for age, pain intensity, pain-catastrophising and pain-acceptance. However, dispositional mindfulness did not predict physical or social functioning in either group. Dispositional mindfulness scores were normally distributed in both groups, did not differ significantly across the two groups and were not associated with pain intensity in either group. The CAMM demonstrated good internal consistency in both groups. *Conclusions*: Dispositional mindfulness is an important construct to consider with adolescents experiencing mood and anxiety problems in both general population and chronic pain samples. Further research should aim to replicate these findings in a larger clinical sample and explore the predictive power of dispositional mindfulness in longitudinal designs.

## Introduction

Chronic pain lasting longer than three months is estimated to affect one in four adolescents (King et al., 2011), with approximately 5% experiencing significant problems with distress and functioning that cannot be explained by pain factors alone (Cohen, Vowles, & Eccleston, 2010; Gatchel, Peng, Peters, Fuchs, & Turk, 2007; Huguet & Miró, 2008; Kashikar-Zuck et al., 2008; Noel, Groenewald, Beals-Erickson, Gebert, & Palermo, 2016). This has led researchers to investigate a number of associated social, familial and cognitive-behavioural processes over the last two decades with varying success (Cousins, Kalapurakkel, Cohen, & Simons, 2015; Eccleston, Crombez, Scotford, Clinch, & Connell, 2004; Noel, Petter, Parker, & Chambers, 2012).

Pain-catastrophising, defined as an exaggerated mental set of rumination, magnification and helplessness in the context of actual or anticipated pain (Crombez et al., 2003), predicts distress and functioning in the context of adolescent chronic pain (Tran et al., 2015). The prominent Fear Avoidance model (Vlaeyen & Linton, 2000) proposes that when an individual perceives pain as threatening, fear of pain leads to catastrophising, which results in behavioural avoidance, which then causes in a decline in functioning and an increase in emotional distress (Simons & Kaczynski, 2012). However, although adolescent psychological treatments based on this model generally yield moderate effect sizes for pain reduction, and small effect sizes for increased functioning, improvements in anxiety and depression symptomology are often not observed (Fisher et al., 2014; Palermo, Eccleston, Lewandowski, Williams, & Morley, 2010).

Contextualized cognitive-behavioural models of chronic pain such as Acceptance and Commitment Therapy (Pielech, Vowles, & Wicksell, 2017) are less concerned with the *content* of cognitions, and instead place more emphasis on an individual's *relationship* to their pain experiences. Two key constructs are pain-acceptance and mindfulness (McCracken, 2010). Pain-acceptance can be defined as experiencing pain without taking actions to control it and persisting with activity in the presence of pain (McCracken, Gauntlett-Gilbert, & Eccleston, 2010), and adolescent cross-sectional studies are beginning to demonstrate that pain-acceptance also predicts distress and functioning after controlling for other key established factors (Kalapurakkel, Carpino, Lebel, & Simons, 2014). Mindfulness is most commonly defined as "paying attention on purpose, in the present moment, non-judgementally" (Kabat-Zinn, 2003, p.145), but although mindfulness-based treatment studies in the context of adult chronic pain date back to the 1980s the role of dispositional mindfulness (a general tendency to abide in mindful states over time) has not yet been investigated in an adolescent chronic pain sample.

Adult theories and measures of mindfulness are often multi-faceted, broad-ranging and complex (Brown & Ryan, 2004). For example, the Kentucky Inventory of Mindfulness Skills (Baer, Smith & Allen, 2004) includes the four sub-components of 'observing', 'acting with awareness', 'accepting without judgement' and 'describing'. However, the developmentally-appropriate positioning of this study aligns itself with key research undertaken by Greco et al (2011) indicating that a single factor model comprising of 'present-moment awareness' and 'non-judging' works best when conceptualising dispositional mindfulness for an adolescent population. The coupling of these two elements is important, because present-moment awareness with a critical stance would be maladaptive.

Because dispositional mindfulness involves 'noticing and stepping back from' rather than 'being immersed in and controlled by' thoughts, emotions and sensations (Shapiro, Carlson, Astin, & Freedman, 2006), it shares attributes with pain-acceptance (McCracken & Keogh, 2009) and has been found to be inversely related to pain-catastrophising in adults (Day, Smitherman, Ward, & Thorn, 2015). Importantly though, adult pain studies have demonstrated that dispositional mindfulness accounts for unique variance in distress (and sometimes functioning) after controlling for pain-catastrophising and pain-acceptance (McCracken et al., 2007; McCracken & Keogh, 2009; Mun, Okun, & Karoly, 2014; Schütze, Rees, Preece, & Schütze, 2010). The clinical implication is that, in addition to pain-specific variables such as pain-catastrophising and pain-acceptance, a *general* tendency to pay attention to present-moment awareness without judgment may also play an important role in mitigating distress in the context of chronic pain. Indeed, other trait-like qualities such as optimism are now being thought about as potential 'resilience resources' in the adolescent pain literature (Cousins, Cohen, & Venable, 2015). Interestingly, Mun, Okun and Karoly (2014) found that when dispositional mindfulness was entered into their adult pain regression model, pain-catastrophising no longer predicted distress or functioning. Adult chronic pain studies have tended to report negative correlations between (higher) dispositional mindfulness and (lower) reported pain intensity (McCracken et al., 2010).

Despite these important findings from the adult pain literature, and also adolescent general population studies indicating that dispositional mindfulness is positively associated with a variety of mental health outcomes (Greco, Baer, & Smith, 2011; Pallozzi, Wertheim, Paxton, & Ong, 2016), dispositional mindfulness has received very little attention in the adolescent pain literature. Research is limited to a single study conducted by Petter et al. (2013) who found that dispositional mindfulness accounted for unique variance in distress

and functioning after controlling for pain-intensity and pain-catastrophising in healthy adolescents experiencing low-level pain typical of the general population. This study did not include adolescents experiencing chronic pain, and therefore it is not known whether similar findings would be found with a clinical chronic pain sample. This needs to be investigated because developmental differences in attentional, cognitive and interpersonal functioning (e.g., self-regulation, meta-cognition and emotional literacy) mean that findings from adult chronic pain studies cannot necessarily be directly translated onto the adolescent experience of chronic pain (Blakemore & Robbins, 2012; Ciarrochi, Heaven, & Supavadeeprasit, 2008; Dahl, 2004; Semple, Lee, & Miller, 2006; Thompson & Gauntlett-Gilbert, 2008).

Therefore, the aim here was to conduct a cross-sectional study asking adolescents with and without chronic pain to complete the same battery of measures, including the Child and Adolescent Mindfulness Measure (Greco et al., 2011). Based on the findings described above, the primary hypothesis was that dispositional mindfulness would account for unique variance in distress in both the chronic pain and general population sample once demographics, pain-intensity, pain-catastrophising and pain-acceptance had been controlled for. The secondary hypothesis predicted that higher dispositional mindfulness would be associated with lower pain intensity ratings in both samples. Four additional research questions (with no specific predictions due to insufficient previous research) were as follows: Would dispositional mindfulness be normally distributed in the chronic pain as well as the general population sample? Would differences be found in levels of dispositional mindfulness when comparing the two samples? Would dispositional mindfulness also account for unique variance in functioning in either sample? Would the CAMM yield adequate internal consistency in the chronic pain as well as the general population sample?

## Method

### Participants and Procedure

**Chronic pain group.** Potential patients aged 13-17 years presenting for assessment at three regional UK pain clinics (one tertiary and two secondary) between October 2016 and March 2017 were handed information sheets by their clinician. Inclusion criteria included meeting local service criteria (continuation of chronic pain despite appropriate medical intervention) and sufficient English-language skills to complete the survey packs. Exclusion criteria included severe mental disorder (e.g., Psychosis), severe substance abuse or known diagnosis of a terminal illness. Interested adolescents (and their parents for those < 16 years old) were given the choice to complete the consent process and study

pack at the clinic (overseen by a clinician) or at home (overseen by the lead author SW via telephone)[3]. In total, 61 chronic pain patients took part (approximately 40% of those invited), but seven were excluded due to incomplete data, yielding a final sample of 54 patients (15% from the tertiary clinic). Almost 95% of participants in the chronic pain group were White-British, 72% were female and the mean age was 14.6 years (range 13-17, SD = 1.3)[4]. Reasons for not taking part were not recorded. All participants recruited into the chronic pain group were offered a £5 gift voucher as a token of appreciation.

**General population group.** All pupils from two classes in a state-funded UK secondary school (n=51) and a convenience sample of adolescents attending a University undergraduate Psychology open day fair (n=53) were recruited. The lead author (SW) oversaw consent and participation procedures in person. Parents/carers of all school pupils were sent information sheets and opt-out slips in advance of the study, but none were returned. Participants recruited from the University open day were able to consent their selves into the study because they were ≥16 years old. Eight participants were excluded due to reporting no pain over the last week, one was excluded due to receiving treatment for chronic pain and one was excluded because of incomplete data, yielding a final sample of 94 participants (50 from the secondary school and 44 from the University open day). Almost 80% of participants in the general population group were White-British, 69% were female and the mean age was 15.2 years (range 13-17, SD = 1.8). An independent samples *t*-test revealed that although closely matched, the mean ages of the two samples differed significantly, $t(146) = 2.41$, $p<.05$.

**Power.** *G-power* software was used to generate a-priori sample size estimates for the main regression analyses. Inputting an alpha value of 0.05, a small effect size of 0.25, a power value of 0.8 and five predictors yielded an estimate of 92 participants. Therefore, regression analyses undertaken on the general population group and combined data-set will have sufficient power, but regression analyses undertaken on the chronic pain group alone will need to be interpreted with caution.

## Materials

In addition to routine questions regarding demographics, all participants also completed the following set of measures (see Appendix M for an example study pack). Measures of pain-catastrophising and pain-acceptance were chosen because these are key

[3] See Appendix L for a copy of the chronic pain group information sheet and consent form. Minor adaptations were made for the general population group.

[4] The ethnicity and gender demographics are similar to previous adult chronic pain studies (e.g., McCracken et al., 2007), but may not be fully representative of the population of adolescents experiencing chronic pain in the UK. This study may be subject to possible bias (e.g., under-representation of non White-British and male adolescents experiencing chronic pain) influencing referrals into UK pain services.

established constructs in second and third-wave cognitive-behavioural models of chronic pain (McCracken, 2010; Vlaeyen & Linton, 2000). Although evidence suggests that other constructs may also be important (such as coping style and optimism), an a-priori decision was taken to minimise participant load in an attempt to maximise response rate. In terms of measuring dispositional mindfulness, the Child and Adolescent Mindfulness Measure (CAMM) was chosen because it has been shown to be developmentally-appropriate for the adolescent population (Greco et al., 2011). Although evidence supports its use as a single-factor inventory, it was preferred to the adolescent version of the Mindful Attention Awareness Scale (Brown, West, Loverich & Biegel, 2011) because it includes items measuring both 'present moment awareness' and also 'non-judgement'. The CAMM was developed from the four-factor adult Kentucky Inventory of Mindfulness Skills (Baer et al, 2014), excluding the components of 'describing' and 'observing' because they were not found to be suitable for measuring mindfulness in the adolescent population (Greco et al, 2011).

**Pain factors.** Participants were asked to rate their average pain intensity experienced over the last week on a 0-10 visual analog scale with zero representing no pain and ten representing the worst pain possible (Varni, Thompson, & Hanson, 1987). Participants were also asked to identify where in their body the pain was located, at what age they first noticed the pain, whether they were currently taking medication for their pain and whether they had previously received any treatment for their pain.

**Distress and functioning.** The Bath Adolescent Pain Questionnaire (BAPQ: Eccleston et al., 2005) sub-scales for depression, anxiety, social and physical functioning were used. The depression subscale comprises six statements such as "I feel sad", the anxiety subscale comprises seven statements such as "I worry about the future" and the physical and social functioning subscales both comprise nine statements such as "I need help dressing or bathing" and "I go out to meet my friends". Respondents are required to endorse each statement on a five-point Likert scale (0 = never, 4 = always) with reference to the last two weeks. These subscales have demonstrated good internal consistency (Cronbach's alpha values ranging from .80 - .83) and construct validity (Eccleston et al., 2005).

**Pain-catastrophising**. The Pain Catastrophizing Scale for Children (PCS-C: Crombez et al., 2003) has 13 items (e.g. "when I have pain I feel I can't stand it any more") which the respondent has to endorse on a five-point Likert scale (0 = not at all, 4 = extremely). An individual's general tendency to respond to pain with catastrophising is measured (i.e., no specific time-frame is imposed). Recent evidence favours a uni-dimensional factor analysis, rather than the proposed three subscales of rumination,

magnification and helplessness (Pielech et al., 2014). Used as a single-factor scale, the PCS-C has demonstrated good internal consistency (Cronbach's alpha = .87) and construct validity (Crombez et al., 2003).

**Pain-acceptance**. The adolescent version of the Chronic Pain Acceptance Questionnaire (CPAQ-A: McCracken et al., 2010) has 20 items (e.g. "it's ok to experience pain") which the respondent has to endorse on a five-point Likert scale[5] (0 = never true, 4 = always true). An individual's general tendency to respond to pain with acceptance is measured (i.e., no specific time-frame is imposed). Evidence supports the two-factor analysis of 'pain willingness' (e.g., "I need to concentrate on getting rid of my pain") and 'activity engagement' (e.g., "I can do activities well even if I do not control my pain") subscales. Each subscale has demonstrated good internal consistency (Cronbach's alpha = .75 and .86) and construct validity (McCracken et al., 2010).

**Dispositional mindfulness.** The Child and Adolescent Mindfulness Measure (CAMM: Greco et al., 2011) is a single-factor measure of dispositional mindfulness. The respondent is required to endorse each of the 10 reverse-scored items (e.g. "at school I walk from class-to-class without noticing what I'm doing", "I get upset with myself for having feelings that don't make sense") on a five-point Likert scale (0 = never true, 4 = always true). An individual's general tendency to abide in mindful states is measured (i.e., no specific time-frame is imposed). The CAMM has demonstrated good internal consistency (Cronbach's alpha of .81) and construct validity (Greco et al., 2011).

## Design

All participants completed the same set of measures at one time-point only. Chronic pain group participants recruited from the tertiary clinic completed the CPAQ-A and the BAPQ as part of their routine assessment and participants recruited from one of the two secondary care clinics completed the BAPQ as part of their routine assessment. Other participants completed all measures as part of the study pack.

## Ethical Approval

For the chronic pain group, ethical approval was granted by the East of England Cambridgeshire and Hertfordshire NHS Research and Ethics Committee, the Health Research Authority and the University of Bath Psychology Department Ethics Committee (see Appendices N, O and P). Local research and development offices also consented. For

[5] Given that participants in the general population group were not experiencing chronic pain, they were instructed to think about the type of pain they tend to experience day-to-day when completing this measure.

the general population group, ethical approval was granted by the University of Bath Psychology Department ethics committee (see Appendix P).

### Data Analysis

All data were screened for outliers, as well as assumptions of normality, linearity, collinearity, homogeneity and independent errors using graphical and statistical means. In terms of missing data, an a-priori decision was taken to replace a participant's missing scale items with their mean scale or sub-scale score when a participant neglected to respond to up to two items of a scale (this happened on 14 occasions). Where a participant neglected to respond to more than two items of a scale, the scale was removed from analyses (this happened on 8 occasions). A series of independent *t*-tests was planned to assess significance of group differences for key variables. A series of Pearson's coefficient bivariate correlations was planned to assess the relationship between dispositional mindfulness and other key variables. A series of linear hierarchical multiple regression analyses was planned separately for the chronic pain and general population groups to assess whether dispositional mindfulness accounted for unique variance in mood, anxiety, physical and social functioning in each sample (once other key factors had been controlled for). Based on theoretical rationale derived from the adult pain studies described in the introduction, it was planned to enter demographics and pain intensity at step 1, followed by pain-catastrophising at step 2, pain-acceptance subscales at step 3 and dispositional mindfulness at step 4. The same regression analyses were also planned for the combined data-set, with group added as a new variable at step 1 and also with group x predictor interaction terms added at step 5.

## Results

### Preliminary Analyses

SPSS version 23 was used for all data analysis. Following initial screening, four extreme outliers caused by data entry mistakes were corrected. Parametric assumptions were not met for all variables, therefore inferential statistics were conducted using the BCa 95% bootstrapping method (set at 1000 samples). Given the key research questions, it is worth noting here that CAMM scores were normally distributed in both groups and the CAMM also demonstrated a Cronbach's alpha value of .81 for the chronic pain group (see Table 3.1). Cronbach's alpha fell below .70 for the BAPQ physical functioning subscale in the general population group.

Table 3.1

*Cronbach's Alpha Values for all Measures*

| | **Chronic pain group** | **General population group** |
|---|---|---|
| CAMM | .81 | .85 |
| PCS-C | .94 | .92 |
| CPAQ-A | .84 | .88 |
| - Pain willingness sub-scale | .78 | .85 |
| - Activity engagement sub-scale | .83 | .80 |
| BAPQ (Depression) | .84 | .81 |
| BAPQ (Anxiety) | .71 | .80 |
| BAPQ (Social functioning) | .82 | .82 |
| BAPQ (Physical functioning) | .84 | .66 |

**Group Characteristics**

Table 3.2 provides an overview of the proportion of participants in each group that reported different types of pain. Pain was more commonly reported in all body locations by adolescents in the chronic pain group, except head and chest. Overall, 74% of adolescents in the chronic pain group reported pain across multiple sites, whereas this was only reported by 12% of the general population group. The average number of years since first noticing the pain was 3.9 (SD = 2.8) in the chronic pain group and 2.2 (SD = 2.6) in the general population group[6]. The proportion of participants reporting that they were currently taking medication for their pain was higher in the chronic pain group (57% v 10%), as was the proportion of participants reporting that they had previously received some form of medical treatment for their pain (85% v 51%).

Table 3.3 provides means, standard deviations and independent *t*-test statistics for each of the key variables. Average pain intensity for the previous week, general pain-catastrophising and two-week depression and anxiety symptomology were all significantly higher (i.e. worse) in the chronic pain group. In contrast, pain-acceptance (including both subscales), physical and social functioning were all significantly higher (i.e., better) in the general population group. None of the BCa bootstrapped 95% confidence intervals crossed zero indicating that each of these findings are likely to be reliable. Dispositional mindfulness scores did not differ significantly across the two groups, answering this key research question.

[6] This does not imply continuous duration of pain.

Table 3.2

*Proportion of Adolescents Experiencing Different Types of Pain in both Groups*

| | **Chronic pain group (N=54)** | **General population group (N=94)** |
|---|---|---|
| Everywhere | 15% | 0% |
| Back | 43% | 11% |
| Leg | 28% | 4% |
| Arm, elbow or shoulder | 28% | 1% |
| Hip | 19% | 2% |
| Head | 17% | 21% |
| Neck | 15% | 4% |
| Wrist or hand | 15% | 1% |
| Knee | 15% | 7% |
| Abdomen | 13% | 6% |
| Joints | 9% | 4% |
| Ankle | 7% | 3% |
| Chest | 4% | 4% |
| Foot or heel | 7% | 1% |

Table 3.3

*Means, Standard Deviations and Group Difference Statistics for Key Variables*

| | **Chronic pain group (N=54)** | **General population group (N=94)** | **T-test statistic** | **Mean difference BCa 95% CI** |
|---|---|---|---|---|
| Pain intensity (0-10) | 6.9 (1.9) | 3.4 (2.0) | $t(146)=10.80$, $p<.001$ | 2.9 - 4.2 |
| CPAQ-A (0-80) | 35.2 (10.7) | 59.9 (11.0) | $t(143)=13.20$, $p<.001$ | -28.2 - -20.8 |
| - Activity engagement (0-44) | 22.2 (7.0) | 34.8 (6.2) | $t(143)=11.36$, $p<.001$ | -14.7 - -10.2 |
| - Pain willingness (0-36) | 13.0 (6.0) | 25.0 (6.8) | $t(143)=10.68$, $p<.001$ | -14.2 - -9.7 |
| PCS-C (0-52) | 31.4 (11.5) | 16.6 (9.1) | $t(144)=8.59$, $p<.001$ | 10.8 - 17.8 |
| BAPQ | - | - | - | - |
| - Physical functioning[a] (0-36) | 20.8 (7.5) | 30.9 (3.5) | $t(62)=9.04$, $p<.001$ | -12.4 - -7.9 |
| - Social functioning (0-36) | 18.3 (6.5) | 24.6 (5.2) | $t(146)=6.36$, $p<.001$ | -8.1 - -4.1 |
| - Depression (0-24) | 14.1 (4.5) | 10.1 (4.2) | $t(145)=5.43$, $p<.001$ | 2.5 - 5.4 |
| - Anxiety (0-28) | 14.6 (4.3) | 12.9 (4.8) | $t(144)=2.38$, $p<.05$ | 0.1 - 3.3 |
| CAMM (0-40) | 20.0 (7.5) | 22.0 (8.0) | $t(146)=1.72$, $p=.09$ | -4.7 - 0.69 |

* p<.05, ** p<.01; [a] = Levene's test indicated that equal variances could not be assumed, perhaps indicating ceiling effects in the general population group

**Bivariate Correlations**

Tables 3.4 and 3.5 provide an overview of all bivariate correlations, with BCa bootstrapped 95% confidence intervals provided for the significant dispositional mindfulness correlations. In both groups, higher dispositional mindfulness was significantly associated with being male ($r$ = .35 and .27), less depression ($r$ = -.58 and -.50), less anxiety ($r$ = -.67 and -.59), less pain-catastrophising ($r$ = -.52 and -.41) and more pain-willingness ($r$ = .37 and .42). In the general population group only (but not the chronic pain group), higher dispositional mindfulness was also significantly associated with being older ($r$ = .27), more activity engagement ($r$ = .22), better social functioning ($r$ = .27), better physical functioning ($r$ = .21) and less medication use ($r$ = -.22). None of these BCa bootstrapped 95% confidence intervals crossed zero. Dispositional mindfulness was not significantly associated with social or physical functioning in the chronic pain group, and in neither group was dispositional mindfulness associated with pain-intensity or pain-duration, which answers another key research question.

Other key significant correlations found in both groups included the following: pain intensity was negatively associated with physical functioning; pain-catastrophising was negatively associated with activity engagement and pain-willingness, but positively associated with depression and anxiety; activity engagement was negatively associated with depression, but positively associated with physical functioning; and pain willingness was negatively associated with physical functioning. In the chronic pain group only: medication use was negatively associated with social functioning; and activity engagement was positively associated with social functioning. In the general population group only: age was positively associated with medication use, pain-catastrophising, depression and anxiety, but negatively associated with pain-willingness; being female was positively associated with pain-catastrophising, but negatively associated with pain-willingness; medication use was positively associated with pain-catastrophising and depression; and pain-catastrophising was negatively associated with physical and social functioning.

Table 3.4

*Correlations between Mindfulness and Key Variables for the Chronic Pain Group (BCa bootstrapped 95% CI in parentheses)*

| N=54 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1. Mindfulness** | -.22 | **.35**** (.07 - .55) | .24 | .09 | -.11 | **.52**** (-.31 - -.69) | .02 | **.37**** (.12 - .62) | .17 | .11 | **-.58**** (-.36 - -.73) | **-.67**** (-.54 - -.79) |
| **2. Age** | - | -.08 | -.07 | .26 | .04 | -.13 | .05 | .24 | .27 | .33* | -.12 | .16 |
| **3. Gender** | | - | -.16 | .11 | -.12 | -.25 | .02 | .19 | -.18 | .19 | -.24 | -.26 |
| **4. Pain last week** | | | - | .20 | .11 | -.05 | -.16 | -.07 | .14 | **-.35**** | -.02 | -.05 |
| **5. Pain duration** | | | | - | -.20 | -.01 | -.09 | .10 | -.04 | -.15 | -.02 | .05 |
| **6. Taking medication** | | | | | - | -.02 | -.10 | .16 | **-.30*** | -.21 | -16 | .02 |
| **7. Pain catastrophising** | | | | | | - | **-.39**** | **-.72**** | -.24 | -.24 | **.48**** | **.46**** |
| **8. Activity engagement** | | | | | | | - | **.37**** | **.40**** | **.34*** | **-.37**** | -.02 |
| **9. Pain willingness** | | | | | | | | - | .19 | .20 | **-.37**** | -.28 |
| **10. Social functioning** | | | | | | | | | - | **.36**** | **-.55**** | -.24 |
| **11. Physical functioning** | | | | | | | | | | - | **-.41**** | -.05 |
| **12. Depression** | | | | | | | | | | | - | **.66**** |
| **13. Anxiety** | | | | | | | | | | | | - |

* p<.05, ** p<.01

Table 3.5

*Correlations between Mindfulness and Key Variables for the General Population Group (BCa bootstrapped 95% CI in parentheses)*

| N=94 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1. Mindfulness** | **.41**** (.23 - .59) | **.27**** (.06 - .44) | .02 | -.13 | **-.22*** (-.08 - -.37) | **-.41**** (-.20 - -.59) | **.22*** (.01 - .39) | **.42**** (.24 - .56) | **.27**** (.03 - .46) | **.21*** (.02 - .43) | **-.50**** (-.30 - -.65) | **-.59**** (-.44 - -.71) |
| **2. Age** | - | **-.46**** | -.04 | .04 | **-.21*** | **.47**** | -.14 | **-.42**** | -.11 | -.17 | **.25*** | **.27**** |
| **3. Gender** | | - | .10 | -.03 | .08 | **-.27**** | .20 | **.28**** | -.02 | .12 | -.17 | -.15 |
| **4. Pain last week** | | | - | -.05 | -.11 | -006 | -.06 | -.08 | .11 | **-.22*** | .11 | -.01 |
| **5. Pain duration** | | | | - | -.03 | .13 | .10 | .02 | -.07 | .04 | -.02 | .08 |
| **6. Taking medication** | | | | | - | **.24*** | -.12 | -.20 | -.10 | -.11 | **.23*** | .18 |
| **7. Pain catastrophising** | | | | | | - | **-.48**** | **-.71**** | **-.21*** | **-.37**** | **.41**** | **.36**** |
| **8. Activity engagement** | | | | | | | - | **.52**** | .12 | **.38**** | **-.25*** | **-.30**** |
| **9. Pain willingness** | | | | | | | | - | .09 | **.26*** | **-.31**** | **-.31**** |
| **10. Social functioning** | | | | | | | | | - | .15 | **-.55**** | **-.45**** |
| **11. Physical functioning** | | | | | | | | | | - | **-.24*** | -.18 |
| **12. Depression** | | | | | | | | | | | - | **.66**** |
| **13. Anxiety** | | | | | | | | | | | | - |

* p<.05, ** p<.01

**Regression Analyses**

For the chronic pain and general population group hierarchical regression models, the following predictors were entered in four stages: (1) age, pain intensity; (2) pain-catastrophising; (3) pain-willingness, activity engagement; (4) dispositional mindfulness. Gender, pain-duration and medication use were not included because these variables were largely unrelated to the dependent variables of interest (only two of 24 possible correlations reaching significance).

**Chronic pain group.** The final chronic pain group regression models summarized in Table 3.6 indicate that dispositional mindfulness accounted for unique variance in mood (*b* = -.40) and anxiety (*b* = -.35) after controlling for all other factors. On average, as dispositional mindfulness increased by one unit, depressive symptomology decreased by 0.4 units and anxiety decreased by 0.35 units (when all other variables are held constant). However, dispositional mindfulness was not found to account for unique variance in social or physical functioning (the BCa 95% bootstrapped confidence intervals crossed zero for the latter). Pain-catastrophising accounted for unique variance in mood and anxiety when entered at step 2, but this effect was not maintained when dispositional mindfulness was entered at step 4[7]. Activity engagement accounted for unique variance in mood (*b* = -.25), physical (*b* = .33) and social functioning (*b* = .42). Age predicted physical (*b* = 2.30) and social functioning (*b* = 1.70), but confidence intervals crossed zero for the influence of age on mood. Pain intensity predicted physical functioning (*b* = -1.43).

**General population group.** Table 3.7 indicates that the same regression analyses performed on the general population sample produced a similar pattern of results (albeit with dispositional mindfulness accounting for a smaller proportion of variance in mood). Although dispositional mindfulness also accounted for unique variance in social functioning (*b* = 0.18), the bootstrapped confidence intervals crossed zero. Activity engagement, age and pain intensity had less predictive power.

**Combined data-set.** When the same regression analyses were performed on the combined data-set with a group variable added to step 1, dispositional mindfulness again accounted for unique variance in mood and anxiety with no main effects of group. When group x predictor interaction terms were added at step 5, group was not found to moderate the relationship between dispositional mindfulness and mood or anxiety.

[7] Entry order did not affect these results, or the additional regression analyses reported herein.

Table 3.6

*Final Hierarchical Regression Models for the Chronic Pain Group (BCa bootstrapped 95% CI in parentheses)*

| *N=54* | **Predictor** | **Final B** | **Standardized Beta** | **$R^2$ change** | **Total $R^2$** |
|---|---|---|---|---|---|
| ***Depression*** | | | | | |
| 1 | Age | -0.80* | **-0.23*** | .01 | |
| | | (-1.58 - 0.14) | | | |
| | Pain intensity | 0.24 | 0.10 | | |
| 2 | Pain-catastrophising | 0.04 | -0.10 | .22 | |
| 3 | Pain-willingness | 0.13 | 0.17 | .05 | |
| | Activity engagement | **-0.25**** | **-0.38**** | | |
| | | (-0.39 - -0.04) | | | |
| 4 | Dispositional mindfulness | **-0.40**** | **-0.61**** | .26 | .54 |
| | | (-0.56 - -0.25) | | | |
| ***Anxiety*** | | | | | |
| 1 | Age | 0.16 | 0.05 | .02 | |
| | Pain intensity | 0.41 | 0.18 | | |
| 2 | Pain catastrophising | 0.12 | 0.31 | .24 | |
| 3 | Pain-willingness | 0.13 | 0.18 | .03 | |
| | Activity engagement | 0.02 | 0.03 | | |
| 4 | Dispositional mindfulness | **-0.35**** | **-0.61**** | .21 | .50 |
| | | (-0.55 - -0.20) | | | |
| ***Social functioning*** | | | | | |
| 1 | Age | **1.70*** | **0.34*** | .10 | |
| | | (0.35 – 3.10) | | | |
| | Pain intensity | 0.58 | 0.17 | | |
| 2 | Pain-catastrophising | 0.02 | 0.04 | .04 | |
| 3 | Pain-willingness | -0.12 | -0.12 | .14 | |
| | Activity engagement | **0.42**** | **0.46*** | | |
| | | (0.16 - 0.65) | | | |
| 4 | Dispositional mindfulness | 0.21 | 0.25 | .04 | .31 |
| ***Physical functioning*** | | | | | |
| 1 | Age | **2.30*** | **0.40**** | .20 | |
| | | (1.12 – 4.06) | | | |
| | Pain intensity | **-1.43**** | **-0.35*** | | |
| | | (-2.65 - -0.67) | | | |
| 2 | Pain-catastrophising | -0.02 | -0.03 | .05 | |
| 3 | Pain-willingness | -0.21 | -0.17 | | |
| | Activity engagement | **0.33*** | **0.31*** | .05 | |
| | | (0.01 – 0.67) | | | |
| 4 | Dispositional mindfulness | 0.32* | **0.32*** | .06 | .36 |
| | | (-.04 – 0.68) | | | |

* p<.05, ** p<.01; Beta coefficients are from the final equation

Table 3.7

*Final Hierarchical Regression Models for General Population Group (BCa bootstrapped 95% CI in parentheses)*

| *N=94* | **Predictor** | **Final B** | **Standardized Beta** | **$R^2$ change** | **Total $R^2$** |
|---|---|---|---|---|---|
| ***Depression*** | | | | | |
| 1 | Age | -0.09 | -0.04 | .02 | |
| | Pain intensity | 0.37 | 0.17 | | |
| 2 | Pain-catastrophising | **0.15*** | **0.33*** | .22 | |
| | | (0.01 - 0.31) | | | |
| 3 | Pain-willingness | 0.08 | 0.13 | | |
| | Activity engagement | -0.04 | -0.06 | .04 | |
| 4 | Dispositional mindfulness | **-0.22*** | **-0.42*** | .26 | .33 |
| | | (-0.33 - -0.08) | | | |
| ***Anxiety*** | | | | | |
| 1 | Age | -0.08 | -0.03 | .06 | |
| | Pain intensity | 0.09 | 0.03 | | |
| 2 | Pain catastrophising | 0.05 | 0.09 | .07 | |
| 3 | Pain-willingness | 0.05 | 0.07 | | |
| | Activity engagement | -0.13 | -0.17 | .03 | |
| 4 | Dispositional mindfulness | **-0.34**** | **-0.57**** | .24 | .39 |
| | | (-0.50 - -0.18) | | | |
| ***Social functioning*** | | | | | |
| 1 | Age | 0.15 | 0.05 | .01 | |
| | Pain intensity | 0.16 | 0.06 | | |
| 2 | Pain-catastrophising | -0.11 | -0.18 | .03 | |
| 3 | Pain-willingness | -0.13 | -0.16 | | |
| | Activity engagement | 0.06 | 0.07 | .01 | |
| 4 | Dispositional mindfulness | 0.18* | **0.27*** | .05 | .10 |
| | | (-0.02 – 0.34) | | | |
| ***Physical functioning*** | | | | | |
| 1 | Age | -0.11 | -0.05 | .08 | |
| | Pain intensity | -0.35 | -0.19 | | |
| 2 | Pain-catastrophising | **-0.12*** | **-0.31*** | .11 | |
| | | (-0.24 - -0.01) | | | |
| 3 | Pain-willingness | -0.08* | **-0.15*** | | |
| | | (-0.24 – 0.07) | | | |
| | Activity engagement | 0.17 | 0.29 | .06 | |
| 4 | Dispositional mindfulness | 0.03 | 0.08 | .01 | .26 |

* p<.05, ** p<.01; Beta coefficients are from the final equation

## Discussion

As predicted, dispositional mindfulness accounted for unique variance in distress both in adolescents with and without chronic pain (after controlling for demographics, pain-intensity, pain-catastrophising and pain-acceptance). The secondary hypothesis that higher dispositional mindfulness would be associated with lower pain intensity ratings in both groups was not supported. In terms of the four additional research questions, dispositional mindfulness was found to be normally distributed in both groups,

dispositional mindfulness did not predict physical or social functioning in either group, the CAMM demonstrated good internal consistency in both groups, and levels of dispositional mindfulness were not found to differ significantly across the two groups.

This novel study is the first to extend the adult chronic pain literature (McCracken et al., 2007; Mun et al., 2014; Schutze et al., 2010) by demonstrating that dispositional mindfulness also accounts for unique variance in distress in adolescents experiencing chronic pain (moderate effect size for both mood and anxiety). This study also offers a replication of findings by Petter et al. (2013), demonstrating that this was also the case in the healthy adolescent sample (small effect size for mood, moderate effect size for anxiety). As with Mun et al. (2014), the current study found that pain-catastrophising no longer predicted mood or anxiety once dispositional mindfulness was entered into the regression model. This has significant theoretical and clinical implications for adolescent cognitive-behavioural models that emphasise the role of catastrophising, but do not encompass dispositional mindfulness (e.g., the Fear Avoidance Model: Simons & Kaczynski, 2012). The finding that dispositional mindfulness did not predict physical or social functioning in the adolescent chronic pain group is consistent with the literature, which has shown mixed results in adult chronic pain samples (McCracken & Keogh, 2009). Activity engagement (but not pain willingness) predicted physical and social functioning in the current study's adolescent chronic pain group. This suggests that avoidance behaviours (inversely related to activity engagement) may drive functioning difficulties in adolescents experiencing chronic pain (Kalapurakkel et al., 2014), but this was not the case for the healthy adolescent group.

The unexpected finding that dispositional mindfulness was not significantly associated with pain-intensity is generally at odds with most findings from adult chronic pain studies (McCracken et al., 2007; McCracken & Keogh, 2009) and adolescent low-pain samples (Petter et al. 2013). One possible explanation could be related to the brevity of the pain intensity measure used in the current study, which may have failed to fully capture the reality of pain intensity in the sample. However, whilst it is possible that a different result may have been found if a more comprehensive composite measure had been used (or indeed a different mindfulness measure), it is also possible that this may be a true (and perhaps important) finding. Indeed, although mindfulness theory would predict a negative association between (higher) dispositional mindfulness and (lower) distress in the context of pain, it would not necessarily predict lower pain ratings from individuals experiencing higher levels of dispositional mindfulness. In fact, one could argue that because higher levels of present-moment awareness and non-judgment result in the

individual accepting the presence of pain more (whilst avoiding it less), they might therefore report similar (or even higher) levels of pain intensity than individuals scoring lower on dispositional mindfulness. This is a complicated and somewhat thorny issue that clearly requires further attention, but it is worth noting that the current study's finding is not inconsistent with Schutze et al. (2010) who found that dispositional mindfulness was not significantly lower in an (adult) chronic pain sample when compared to an (adult) general population sample.

Related to this is the finding that dispositional mindfulness was normally distributed in the adolescent chronic pain sample. This is the first study to demonstrate this, extending what we know from general adolescent population studies (Greco et al., 2011) to the chronic pain population. Certainly, further research is needed to clarify the relationship between dispositional mindfulness and pain intensity, however the current study suggests that high pain levels are not necessarily a barrier to the existence or development of mindfulness. Longitudinal studies are required to explore the role played by dispositional mindfulness in the experience of chronic pain and the possibility that it might be a 'resilience resource', as suggested by Cousins et al. (2015).

Strengths of this study include the novelty of examining dispositional mindfulness in a chronic pain sample of adolescents, the use of standardized measures, the use of multiple recruitment sites and comparison with a large healthy sample. There are some limitations to this study however, particularly the small sample size of the chronic pain group, the brevity of the pain-intensity measure used (discussed above) and the single time point cross-sectional design. Longitudinal adolescent research suggests that dispositional mindfulness tends to predict levels of mood and anxiety (Ciarrochi, Kashdan, Leeson, Heaven, & Jordan, 2011), but the direction of causality cannot be confirmed in the current study. Further longitudinal studies (with a larger chronic pain sample) will be needed to elucidate the mechanisms or processes underlying the observed relationship between dispositional mindfulness and distress in both groups. It may be that similar processes explain this relationship in both clinical and healthy samples, or it may be that additional variables (e.g., pain-intensity) are more influential in chronic pain samples. Finally, because the CAMM is a one-dimensional measure, this study was not able to differentiate between the elements of 'present-moment awareness' and 'non-judgment' that define the complex and broad construct of mindfulness (Brown et al., 2007). This is important if we want to develop our understanding, models and treatment of adolescent chronic pain.

Notwithstanding these caveats, the current study can conclude that dispositional mindfulness accounted for unique variance in distress (but not functioning) in adolescents

with and without chronic pain. This supports the theoretical importance of dispositional mindfulness in contextualized cognitive-behavioural models such as ACT (Pielech et al., 2017), and suggests that dispositional mindfulness is an important construct to consider with adolescents experiencing mood and anxiety problems in both general population and chronic pain samples. The findings also add weight to an emerging literature that is investigating the benefits of adding mindfulness training to multi-disciplinary treatment programmes for adolescent chronic pain (Gauntlett-Gilbert, Connell, Clinch & McCracken, 2013). In doing so, the current study provides indirect support for the ACT premise that a suitable focus for treatment should be to 'live well' with chronic pain, rather than reduce or 'fight against' the pain.

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## Main Research Project: Executive Summary

Chronic pain lasting longer than three months is estimated to affect one in four adolescents, with approximately 5% experiencing significant problems with distress and functioning that cannot be explained by biomedical factors alone. Pain-catastrophising (an exaggerated mental set of rumination, magnification and helplessness in the context of actual or anticipated pain) and pain-acceptance (experiencing pain without taking actions to control it and persisting with activity in the presence of pain) have both been found to influence levels of distress and functioning in adults and adolescents experiencing chronic pain. Dispositional mindfulness (a tendency to pay attention to present-moment awareness without judgment) has been found to account for unique variance in distress (and sometimes functioning) in adult pain studies after controlling for pain-catastrophising and pain-acceptance, but the only study to consider dispositional mindfulness in an adolescent context was conducted with a healthy sample experiencing low-level pain. No study has yet investigated the relationship dispositional mindfulness has with pain, distress and functioning in an adolescent chronic pain sample. Developmental differences (such as the development of meta-cognitive and emotional awareness in adolescence) mean that it cannot be assumed that results reported in the adult literature will necessarily translate directly onto an adolescent sample.

Therefore, the main aim of this cross-sectional study was to investigate whether dispositional mindfulness accounts for unique variance in distress and functioning in adolescents with and without chronic pain after controlling for demographics, pain-intensity, pain-catastrophising and pain-acceptance. In total, 54 adolescents seeking help for chronic pain at secondary and tertiary NHS clinics and 94 healthy adolescents from the general population completed the same battery of measures including the Child and Adolescent Mindfulness Measure of dispositional mindfulness (CAMM), the Pain-Catastrophising Scale for Children and the Chronic Pain Acceptance Questionnaire for Adolescents. A series of linear multiple hierarchical regression analyses were planned for each of the dependent variables (mood, anxiety, social functioning and physical functioning). Based on theoretical rationale derived from the adult pain studies, it was decided to enter demographics and pain intensity first, followed by pain-catastrophising at step 2, pain-acceptance subscales at step 3 and dispositional mindfulness at step 4. The same regression analyses were also planned for the combined data-set, with group added as a new variable at step 1 and also with group x predictor interaction terms added at step 5. Based on the findings described above, it was predicted that dispositional mindfulness would account for unique variance in distress in both samples and also the combined data-set.

Executive Summary

The primary hypothesis was supported: dispositional mindfulness accounted for unique variance in mood and anxiety in both groups (and also the combined data-set) after controlling for age, pain intensity, pain-catastrophising and pain-acceptance. However, dispositional mindfulness did not predict physical or social functioning in either group. Dispositional mindfulness scores were normally distributed in both groups, did not differ significantly across the two groups and were not associated with pain intensity in either group. The CAMM demonstrated good internal consistency in both groups.

This novel study is the first to extend the adult chronic pain literature to a clinical adolescent sample and demonstrate that dispositional mindfulness accounts for unique variance in distress in adolescents experiencing chronic pain (moderate effect size for both mood and anxiety). This study also offers a replication of findings demonstrating that this is also the case in the case in a healthy adolescent sample (small effect size for mood, moderate effect size for anxiety). The current study found that pain-catastrophising no longer predicted mood or anxiety once dispositional mindfulness was entered into the regression model. This has significant theoretical and clinical implications for adolescent cognitive-behavioural models that emphasise the role of catastrophising but do not encompass dispositional mindfulness. The finding that dispositional mindfulness did not predict physical or social functioning in the adolescent chronic pain group is consistent with the literature, which has shown mixed results in adult chronic pain samples.

The unexpected finding that dispositional mindfulness was not significantly associated with pain-intensity is at odds with findings from adult chronic pain studies and adolescent low-pain samples. One possible explanation could be related to the brevity of the pain intensity measure used in the current study. However, it is also possible that this is a true finding, and not an artefact of the measure, particularly when considering previous findings suggesting that dispositional mindfulness is not significantly lower on average in adult chronic pain samples compared to adult general population samples. The current study is the first to demonstrate no significant differences in dispositional mindfulness between a chronic pain and general population adolescent sample.

There are some limitations to this study however, particularly the small sample size of the chronic pain group, the brevity of the pain-intensity measure used and the single time point cross-sectional design. The latter means than the direction of causality cannot be confirmed, and processes underlying the relationship between dispositional mindfulness and distress could not be explored via mediation analysis. Nonetheless, this study can conclude that dispositional mindfulness is an important construct to consider with adolescents experiencing mood and anxiety problems in both general population and

chronic pain samples. This supports the theoretical importance of dispositional mindfulness in contextualized cognitive-behavioural models such as Acceptance and Commitment Therapy, and also adds weight to an emerging literature that is investigating the benefits of adding mindfulness training to multi-disciplinary treatment programmes for adolescents seeking help for chronic pain. Further research should aim to replicate these findings in a larger clinical sample and longitudinal studies are also required to further elucidate the specific role played by dispositional mindfulness in the adolescent experience of chronic pain (including the possibility that it might be a ‘resilience resource’).

# Connecting Narrative

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## Connecting Narrative

My interest in child and adolescent mental health has been enhanced throughout my training experience and features as a key theme connecting my three research projects. For example: my Service Improvement Project (SIP) investigated clinician and service user experiences of using routine outcome monitoring in Child and Adolescent Mental Health Services (CAMHS); my Literature Review (LR) evaluated the long-term effectiveness of randomised controlled school-based universal anxiety prevention trials; and my Main Research Project (MRP) investigated the relationship between dispositional mindfulness and psychological distress in adolescents with and without chronic pain. Below I describe and reflect upon my experiences developing, undertaking and writing up each of these research projects, before concluding with a discussion of my case studies and a summary of my future research aspirations.

### Service Improvement Project

I was keen from the outset to pursue a Service Improvement Project linked to a CAMHS team. Dr Maria Loades agreed to supervise a SIP in this area and put me in contact with Dr Libby Rogers, a Clinical Psychologist working in one of the Bristol CAMHS teams. Libby felt that a project focused on highlighting barriers to Routine Outcome Monitoring (ROM) and generating corresponding improvement ideas would be useful to the service. In planning this project, Libby was keen for both service user and clinician perspectives to be gathered, and ideally 'triangulated'. I initially spent a fair bit of time reading the available literature and developing a proposal for Maria to assess.

When designing this SIP I found it difficult to ensure that the design would: a) generate recommendations that would be useful to the service; and b) also be of interest to a wider academic audience via publication. After much deliberation, I settled upon a mixed-methods design encompassing a clinician survey of attitudes towards ROM plus a small number of qualitative interviews with clinicians and services users. I found the process of gaining ethical approval from the University fairly straightforward, and NHS ethics was not required because the local R&D agreed that it fell in the category of 'service evaluation'. The most challenging aspect of this project was running it at a time of significant change and uncertainty within the CAMHS team. Many of the clinicians were particularly busy responding to consultation documents regarding a change in provider. Therefore, in order to gain a 30% response rate for the survey, I had to invest a considerable amount of time reminding and prompting clinicians to participate. I found this difficult, because as a trainee trying to 'impress' possible future employers, I did not want to frustrate anyone. I also had to be very careful how I advertised the project, trying to

ensure that potential participants would see that I was neutral, curious and interested in all perspectives.

When it came to analysis, I found the volume of data initially overwhelming considering I had such limited time available to input, transpose, analyse and interpret. I initially struggled with deciding upon the appropriate statistical analyses for the quantitative survey data due to not having worked with psychometric and Likert scale data previously. The results were interesting and indicated that the main barriers to ROM were clinician concerns that it did not add value to their work and practical issues regarding workload and technology. I enjoyed the process of working alongside a CAMHS development worker to translate these findings into improvement ideas. We jointly presented the project at the annual CAMHS network research day, and I am pleased that the service is planning to action the recommendations provided.

I think the most important learning experience for me was related to how to go about conducting a clinical piece of research that evokes quite strong emotional responses from some of the potential participants. I think I also tried to do too much, and in the future will be inclined to do less, but in more detail. I particularly enjoyed the direct links to clinical practice on the ground, and I learnt a great deal about the practical challenges of undertaking 'action research' in busy clinical environments.

**Literature Review**

I have a longstanding interest in the role schools can play in promoting child mental health and resilience. Because most research in this area needs to be longitudinal, I saw my Literature Review (LR) as an opportunity to immerse myself in this topic and learn more about prevention methodology. I discussed this with Dr Maria Loades and she kindly put me in touch with Professor Paul Stallard. He has undertaken school-based anxiety prevention research and was therefore able to orientate me to key existing reviews and possible ways of addressing gaps in the literature. After a few initial meetings, I settled on undertaking a systematic review of the long-term effectiveness of universal school-based anxiety prevention trials. Later down the line, Dr Catherine Hamilton-Giachritsis joined as my internal supervisor.

I think the most challenging aspect of this project was justifying the rationale for undertaking another review in this vastly researched area and developing a clear distinction between my review and those already published. I also found the process of developing and conducting the search very labour-intensive, not least because I decided to first screen all 359 articles included in the key reviews already published in the area before also

conducting a new database search to capture additional studies not included by previous reviews. Although a relatively small number of studies met inclusion criteria (11), the process of undertaking a risk of bias assessment on each (using Cochrane guidelines) was also time consuming. I was very grateful for the help of a research assistant identified by Paul Stallard (Rebecca Grist) in generating inter-rater reliability, but on reflection I probably invested too much time undertaking quite an extensive search. I was again surprised by how long it took to extract, synthesise and interpret the data, despite not employing meta-analysis methodology. I also found it frustrating trying to extract comparable data from some of the lower-quality studies, but through this process learnt a great deal about why published trials need to adopt a standardised approach to design, data analysis and write-up.

The results were interesting, demonstrating that one program in particular is able to maintain anxiety prevention effects (when compared to a control group) over a period of 12 months. I'm hoping that, when published, this review will be particularly useful for public health personnel because it has clear policy implications. I am not sure that I have the level of rigor and attention to detail required to specialise in the area of evidence evaluation, but I have had a valuable insight into the systematic review methodology. I think evidence reviews are a really useful guide for clinicians, especially now that the quality of trials is improving.

Overall, I'm glad I was able to immerse myself in the school-based anxiety prevention literature, but if I was to undertake another systematic review I would be keen to adopt a team approach. As I gain more clinical experience working in child and adolescent mental health, I may well develop theoretical ideas of my own that I could consider working up into a more conceptual review of the literature. This would probably depend upon having allocated research opportunities.

**Main Research Project**

Although I knew I wanted my Main Research Project (MRP) to be focussed on child and adolescent mental health, I struggled for some time to settle on a particular idea. In the end I decided to focus on the construct of mindfulness (another pre-existing interest of mine). Dr Maria Loades agreed to supervise a project in this area and put me in contact with Dr Jeremy Gauntlett-Gilbert from the Bath Centre for Pain Services. They work from an Acceptance and Commitment Therapy model with adolescents experiencing chronic pain and psychological distress, and because mindfulness is key to this they agreed to

support a MRP investigating the influence of mindfulness in the adolescent experience of chronic pain.

Following initial discussions with Maria and Jeremy, I opted for a simple cross-sectional single-time point questionnaire-based study because I was aware that being over-ambitious often led to recruitment problems within the allocated time constraints. After reading the literature on mindfulness and chronic pain, I noticed that although a series of adult studies had found dispositional mindfulness to account for unique variance in distress, this had not yet been investigated in an adolescent sample. My proposal therefore was to replicate this effect with a sample of adolescents experiencing chronic pain. I worked hard over the second summer preparing the proposal (adopting a linear multiple hierarchical regression design), and Paul Salkovskis (my proposal marker) encouraged me to also recruit a healthy control sample to ensure the design was not fully correlational.

I underestimated the time it took for IRAS ethical approval, not least because I was aiming to recruit from three different NHS sites. At this stage I realised how cumbersome clinical research is compared to the experimental laboratory student-based studies I undertook for my PhD. I found this frustrating because I was keen to get going and anxious about recruiting a reasonable sample size. Around this time I also experienced a change in supervisor, with Dr Liz Marks replacing Maria. Once NHS and University ethical approval had been granted, I then realised I needed to work quite hard to ensure that the clinicians who had kindly offered to promote my study had the information, motivation and resources they needed. Finding the time to do this whilst also recruiting my healthy sample, juggling my placement commitments, other research projects and attending teaching one day a week was a significant learning curve, particularly with regard to switching attention between tasks swiftly and efficiently.

Data-collection ran fairly smoothly thankfully, not least because Dr Konrad Jacobs based at the Oxford site and Dr Nicola Chandler based at the Bristol site promoted my study extensively. Data inputting took a long time (perhaps I should have sought help from a research assistant), but when it came to analysis I was pleased I had adopted a simple design of regression and group comparisons using *t*-tests. However, I had to learn a lot about using psychometrics in research and also the process of undertaking multiple linear hierarchical regression with bootstrapping methodology.

The results supported the main hypothesis that dispositional mindfulness would account for unique variance in depressive and anxious symptomology in both groups, and in doing so demonstrated that this construct needs to be considered in adolescent as well as adult populations. However, the limitations of single-time point design meant that I was

unable to infer direction of causality or perform mediation analysis to further investigate the underlying processes. Nonetheless, I feel pleased to have completed my first piece of clinical research, and am fairly confident that it will be publishable and useful to clinicians working in this area.

Overall, the process of undertaking my MRP has given me a valuable experience of conducting clinical research, which is certainly quite different to the research I undertook for my PhD and post-doc positions. I have learned a great deal about communicating my research plans to clinicians recruiting in the field. I now also have a good understanding of the IRAS ethics process, which will be critical to future clinical research. In particular, this experience has made me reflect on just how challenging it is to undertake research alongside a busy clinical role. However, it is possible provided it is well planned and resourced.

**Case Studies**

Training provided my first exposure to writing up case studies. I found this particularly interesting because of the direct theory-practice links and the opportunity to consider the 'individual' in more detail. Two of my five case studies adopted a Single Case Experimental Design (SCED) and I completed these on my Working Age Adult and CAMHS placements. This was a minimum course requirement, and I can see that if it wasn't mandatory trainees would probably not end up fulfilling this as it can be difficult collecting baseline, session-by-session and follow up data in practice. It is often not the established culture in mental health settings, and although most Clinical Psychologists are quite open to the principle, many find it difficult to find the time to plan for this appropriately. I found this tension interesting, and indeed my Service Improvement Project explored this in detail.

Writing up five case studies over the course of training has helped me establish my reflective scientist-practitioner stance. I think this methodology provides clinicians with the opportunity to share early stages of treatment advances, new ideas and creative ways of working. For example, my CAMHS case study demonstrated that the Clark and Wells cognitive-behavioural model of Social Anxiety Disorder worked well in the context of intensive community-based outreach work for a highly agoraphobic adolescent unable to attend CAMHS clinics. My working age adult case study investigated the reasons why application of the Clark model of panic disorder did not seem to yield improvements regarding a particular feared situation, despite substantial reductions in general anxiety and depression. Session-by-session monitoring and the introduction of additional measures at

different stages of the intervention revealed that 'intolerance' of discomfort and uncertainty may have been acting as barriers to progress.

With regard to my descriptive and evaluative case studies, I tried to write these in a more reflective style and found this to be an equally interesting and valuable experience. Indeed, I noticed that depending upon my focus when writing a case study, different themes emerged. For example, my Older Adult placement case study was quite complex and 'person-centred', therefore the write-up included a highly individualised formulation and intervention. The focus of my Learning Disability case study was on mindfulness for aggressive behaviour and offending in the context of Autism, but I did not have much room to write about the systemic issues that also arose. My specialist CAMHS elective placement case study also provided a valuable experience of writing up a group intervention, where the focus was more on aggregate data and group trends over time. I enjoyed the contrast of my systemic case study writing which yielded a different theoretical focus and approach.

Overall, I am sure that the process of writing up each of my case studies lead to further reflection and consideration of what worked well and what I would perhaps do differently next time. I'm sure I probably paid extra attention to the cases which I selected to write up, and I also enjoyed the opportunity to reflect on what I may have brought to the therapeutic experience for each service user. I like the fact that case studies allow for the publication of complicated material that often reflects clinical realities. I think this is an area of research that is more accessible to clinicians, and I hope that incorporating measures as part of my routine practice will afford me the opportunity to publish case studies of interest in the future.

**Future Research Aspirations**

I would like to continue publishing clinically focussed child and adolescent mental health research, and I think that the extensive requirements of this training course have provided me with the foundations for doing this. I feel that working as a reflective scientist-practitioner suits me well, and in the short-term I will look for opportunities to engage in small-scale research and hopefully publish case studies periodically. This will be challenging, but I hope that one way of facilitating this may be by acting as a field supervisor for local training courses.

I have noticed that despite starting training with far more research than clinical experience, I actually found the research elements most stressful. This may be because I find clinical work suits my characteristics, skills and personality better, but I think the very

limited amount of allocated study time poses a challenge. This is probably mirrored post-qualification, so I do feel prepared for this! Indeed, I think that publishing research alongside a clinical role requires a deep commitment and adequate time and resources. My impression is that most clinicians do not feel able to do this, so I am intrigued to see where I end up in regard to this. I think it is also a complex systemic issue, which can only really be overcome by a culture-shift within the NHS. Ultimately, I embarked upon this training primarily to become a clinician, and so this is where my immediate focus will lie. However, I feel fortunate that both clinical and research opportunities may lie ahead.

**Acknowledgements**

Above and beyond anyone else I need to thank my wife, the wonderful Joanna Waldron, for accepting my (later than usual) decision to undertake Clinical training at the same time as starting our little family. You've supported me the whole way and I really appreciate that. I also want to thank my daughter Nyla (aged 3) and my son Isaac (aged 6 months) for giving me valuable perspective, regular injections of fun and the perfect present-moment antidote to doctorate-induced stress! Despite significant sleep deprivation, having young children at home really enhanced my training experience, particularly given my interest in CAMHS ☺

I also feel really lucky to have been part of a great cohort. Although I may have been the only male, more important to me was not being the only 'older' trainee with children. This made a big difference to my training experience. Although I didn't always have spare energy for socialising, I really enjoyed the parties and meals that I did get to. It was a privilege to train with such a lovely group of people whom I wish all the best in post-qualified life. I hope we stay in touch and continue sharing resources!

I owe a deep gratitude to all the service users I worked with for humouring my early attempts at 'therapy', for taking part in my research, for granting me permission to video record sessions, for consenting to me writing up case studies, and most importantly for sharing such personal information and inspiring me day-to-day with incredible stories of strength, vulnerability and courage. I feel so fortunate that I have a fascinating career ahead of me working with such amazing people.

I'm also really indebted to all of my placement supervisors (Tamzin Haile, Kate Bird, Lynn Maddern, Vicky Tozer, Anna Fussell and Samantha Phillips) and the Bath course team for teaching me how best to help people struggling with mental health problems. In particular, I'd like to thank James Gregory for being a really helpful and friendly clinical tutor, Maria Loades for being my CAMHS 'mentor' and generously supervising several of my projects, Liz Marks for supervising the tail-end of my main research project and Catherine Hamilton- Giachritsis for supervising my literature review. Paul Stallard, Jeremy Gauntlett-Gilbert and Libby Rogers also all acted as really insightful and supportive field supervisors for my research projects.

Finally, last but not least, thanks to good friends for encouraging me to undertake the doctorate in the first place and providing excellent examples of how to endure the tough bits and come out the other side better for it. My social life definitely took a hit during training, but I now intend to get back out there dancing, dj'ing, surfing and generally having fun ☺

# Appendices A-P

## Appendix A: Journal of Mental Health & Prevention Overview

Considering that insights in primary and secondary prevention of mental disorders are becoming ever increasingly important in health care, economics and health political aspects, ***Mental Health & Prevention*** serves as a peer reviewed and multidisciplinary communication platform, covering all aspects of **mental health** and its preservation. *Mental Health & Prevention* publishes reviews, original research and other papers related to research on prevention to support the psychological development of human beings from early childhood across the life span until the old age. The journal focuses on preventive strategies of:

- **mental disorders in childhood and adolescence,**
- **antisocial and violent behavior,**
- **drug addiction,**
- **mood or stress-related disorders,**
- **eating- and sleep disorders,**
- **psychoses and schizophrenia, and**
- **dementia.**

Within its broad scope the journal also welcomes articles from other subject fields like **social, occupational and somatic medicine, epidemiology and health service research.**

*Article Structure*

***Subdivision - numbered sections***

Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line.

***Introduction***

State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

***Material and methods***

Provide sufficient detail to allow the work to be reproduced. Methods already published should be indicated by a reference: only relevant modifications should be described.

***Results***

Results should be clear and concise.

***Discussion***

This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

***Conclusions***

The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

***Appendices***

If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

*Abstract*

A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

*Keywords*

Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

***Reference style***

*Text:* Citations in the text should follow the referencing style used by the American Psychological Association. You are referred to the Publication Manual of the American Psychological Association, Sixth Edition, ISBN 978-1-4338-0561-5,

## Appendix B: Literature Review Program Details

### FRIENDS

The FRIENDS programme, described in detail by Barrett (1999), assists children in learning important skills and techniques that help them cope with and manage anxiety. These techniques include relaxation, cognitive restructuring, attentional training, parent-assisted exposure, and family and peer support. 10 weekly sessions, with two booster sessions designed to fall 1 month and 3 months after the final session. The programme also incorporates four evening sessions for parents, which are scheduled at regular intervals throughout the 10 weeks of the programme.

### Aussie Optimism Program: Positive Thinking Skills

The AOP- PTS (Rooney et al., 2004) is a 10-week universal intervention designed to prevent depression and anxiety among children during the middle childhood years. It uses cognitive and behavioural intervention strategies and targets social, emotional, and cognitive risk and protective factors for anxiety and depression. The cognitive component teaches children to identify and challenge negative thoughts, such as those concerning the self, current life circumstances, and the future, that are known to contribute to depressive and anxiety symptoms (Beck et al., 1979; Kendall, 2007). In addition, children are taught to accurately identify, label and monitor their feelings (Stark, 1990). The social and behavioural component includes engagement in pleasurable events, practice with a fear hierarchy, as well as relaxation training.

### E-couch Anxiety and Worry Program

The 6-week online self-directed anxiety prevention program uses psycho-education over the first two sessions and includes information on generalized anxiety signs and symptoms, risk factors, consequences, and the medical, psychological and lifestyle treatments available. The three toolkits contained in the e-couch Anxiety and Worry program cover CBT, relaxation and physical activity.

## Appendix C: Journal of Child and Adolescent Mental Health Author Guidelines

1. Contributions from any discipline that further clinical knowledge of the mental life and behaviour of children are welcomed. Papers need to clearly draw out the clinical implications for mental health practitioners. Papers are published in English. As an international journal, submissions are welcomed from any country. Contributions should be of a standard that merits presentation before an international readership. Papers may assume any of the following forms: Original Articles; Review Articles; Measurement Issues; Innovations in Practice.

**Original Articles**: These papers should consist of original research findings.

**Review Articles**: These papers are usually commissioned; they should survey an important area of interest within the general field.

**Measurement Issues**: These are commissioned review papers that aim to evaluate evidence-based measurement issues in child mental health disorders and services.

**Innovations in Practice**: Submission to this section should conform to the specific guidelines, given in full below.

2. Manuscripts should be submitted online. For detailed instructions please go to: http://mc.manuscriptcentral.com/camh_journal and c*heck for existing account* if you have submitted to or reviewed for the journal before, or have forgotten your details. If you are new to the journal c*reate a new account.* Help with submitting online can be obtained from Piers Allen at ACAMH (e-mail Piers.Allen@acamh.org.uk)

*3. Recommended guidelines and standards*
Manuscripts should be double spaced and conform to the house style of *CAMH*. The first page of the manuscript should give the title, name(s) and address(es) of author(s), and an abbreviated title (running head) of up to 80 characters. Specify the author to whom correspondence should be addressed and provide their full mailing and email address.

*Summary:* Authors should include a structured Abstract not exceeding 250 words under the sub-headings: Background; Method; Results; Conclusions.

*Keywords:* Please provide 4-6 keywords (use MeSH Browser for suggestions).

*Key Practitioner Message:* (in the form of 3-6 bullet points) should be given below the Abstract, highlighting what's known, what's new and the direct relevance of the reported work to clinical practice in child and adolescent mental health.

Papers submitted should be concise and written in English in a readily understandable style, avoiding sexist and racist language. Original Articles should not exceed 5,500 words, including References and Tables.

Headings: Original articles should be set out in the conventional format: Methods, Results, Discussion and Conclusion. Descriptions of techniques and methods should only be given in detail when they are unfamiliar. There should be no more than three (clearly marked) levels of subheadings used in the text.

For referencing, *CAMH* follows a slightly adapted version of APA Style http:www.apastyle.org/. References in running text should be quoted showing author(s) and date. For up to three authors, all surnames should be given on first citation; for subsequent citations or where there are more than three authors, 'et al.' should be used. A full reference list should be given at the end of the article, in alphabetical order.

References to journal articles should include the authors' surnames and initials, the year of publication, the full title of the paper, the full name of the journal, the volume number, and inclusive page numbers. Titles of journals must not be abbreviated. References to chapters in books should include authors' surnames and initials, year of publication, full chapter title, editors' initials and surnames, full book title, page numbers, place of publication and publisher.

## Appendix D: Service Improvement Project Evidence of Ethical Approval



**RE: Is my project classified as research?**

Agnieszka Ziolek [Agnieszka.Ziolek@nbt.nhs.uk]

**Sent:** 10 February 2016 08:24

**To:** Waldron Sam (AVON AND WILTSHIRE MENTAL HEALTH PARTNERSHIP NHS TRUST)

Hi Sam,

Service evaluation/improvement for the Routine Outcome Monitoring service, as you will be assessing what standard the service is achieving. It therefore will not require Trust Approval nor considered research.

BW

Aggie
Ms. Agnieszka Ziolek
Senior Research Facilitator
Research & Innovation
North Bristol NHS Trust
Floor 3 | Learning & Research building | Southmead Hospital | Westbury-on-Trym | Bristol | BS10 5NB
Tel: 0117 41 49345|email: agnieszka.ziolek@nbt.nhs.uk | www.nbt.nhs.uk/research
Please consider the environment before printing and print double-sided where possible

Ethics 16-007

psychology-ethics
Fri 26/02/2016 13:26
To:
Sam Waldron;
MessageHeaderAnalyzer

Dear Sam Waldron

Reference Number 16-007: Service user and clinician experience of routine outcome monitoring in NBT CAMHS

Thank you for satisfactorily attending to those amendments. I can now confirm that you have full ethical approval for your study.

Best wishes with your research,

Dr Michael J Proulx
Chair, Psychology Research Ethics Committee

## Appendix E: Service Improvement Project Clinician Survey, Information Sheet and Consent Form

For the first page (below), please read each statement carefully and indicate how strongly you agree with it by marking the number that applies to you, from 1 (not at all) to 5 (totally).

| | Routine Outcome Monitoring … | Not at all | Only a little | Somewhat | Quite a bit | Totally |
|---|---|---|---|---|---|---|
| 1 | …wastes time in sessions | 1 | 2 | 3 | 4 | 5 |
| 2 | …and form filling implicitly interrupts the therapeutic relationship | 1 | 2 | 3 | 4 | 5 |
| 3 | …encourages the young person to take responsibility for making change | 1 | 2 | 3 | 4 | 5 |
| 4 | …helps clinicians understand what the young person wants to change | 1 | 2 | 3 | 4 | 5 |
| 5 | …takes too much time to complete | 1 | 2 | 3 | 4 | 5 |
| 6 | …helps keep BOTH the clinician and client focused on the goal of therapy | 1 | 2 | 3 | 4 | 5 |
| 7 | …has no value for clinicians | 1 | 2 | 3 | 4 | 5 |
| 8 | …is another job for clinicians to take on | 1 | 2 | 3 | 4 | 5 |
| 9 | …is a collaborative way of working with a young person | 1 | 2 | 3 | 4 | 5 |
| 10 | …does not fit with more complex cases | 1 | 2 | 3 | 4 | 5 |
| 11 | …if used meaningfully is helpful clinically | 1 | 2 | 3 | 4 | 5 |
| 12 | …is too prescriptive for clinicians | 1 | 2 | 3 | 4 | 5 |

13. How often do you currently use ROM in your clinical practice?

| Never | Rarely | Sometimes | Often | Nearly always |
|---|---|---|---|---|

14. Have you ever received any CYP IAPT training?

15. Which CAMHS team do you usually work in?

16. Profession:

17: Approximate number of years CAMHS experience:

18. Gender:

19. Age:

20. What do you understand the purpose of routine outcome monitoring to be in your service?

21. Which routine outcome measures do you tend to use?

22. What do you think are the main advantages and disadvantages of using routine outcome monitoring in this service?

## Clinician Survey Information Sheet

*You are invited you to take part in a survey about your views and experiences of Routine Outcome Monitoring in NBT CAMHS. Before you decide whether to take part, please read this information sheet, which explains why the survey is being done and what your participation would involve.*

### Title of Project

Survey of Clinician Views and Experiences of Routine Outcome Monitoring in NBT CAMHS

### Why is this survey being done?

In line with CYP IAPT protocol, Bristol CAMHS will be implementing Routine Outcome Monitoring (ROM) as of September 2015. Sam Waldron (trainee Clinical Psychologist at Bath University) is collaborating with Dr Sarah Libby (Clinical Psychologist at East/Central Bristol) and Dr Maria Loades (Research Supervisor at Bath University) to conduct a Service Improvement Project exploring clinician experiences of this. The clinician survey will administered twice, once in October 2015, and then again 6 months later (in March 2016), to assess whether clinician views of ROM change over the initial period of implementation. Information from these surveys will help ensure clinician views and experiences of ROM can be taken into account in service planning. This survey extends previous work undertaken in NBT by Kirstie James, Barbara Hills, Claire Millard and Tessa Weir-Jeffery.

### Do I have to take part?

No, you do not have to take part in the survey. It is entirely voluntary. If you do decide to take part, and then later change your mind, you can withdraw without giving your reasons.

### What will I be asked to do if I take part?

Participants will be required to complete the same survey twice. The first survey will need to be completed and returned before 30th October 2015, and the second survey will need to be completed before the end of March 2016 (when invited). Each survey should take about 10 minutes to complete. You will also be required to complete and return the associated consent form.

**Will my responses be kept confidential?**

Yes. All survey data will be kept confidential and will conform to the Data Protection Act of 1998 with respect to data collection, storage and destruction. If you return a completed survey electronically, it will be saved on the NHS password protected system with access restricted to study personnel. Paper copies will be kept in a secure locked cabinet. Once you have returned both the October 2015 and March 2016 surveys, a unique code will be added to each, and any information linking you to the data will be destroyed so that you cannot be identified from it. Once this has happened, it will not be possible to destroy your anonymised data if you choose to withdraw.

**Are there any advantages from taking part?**

The information collected from you and your colleagues will help ensure clinician views are taken into account when planning the use of ROM in NBT CAMHS.

**Are there any disadvantages/risks from taking part?**

We consider there to be minimal disadvantages, except for the inconvenience of completing and returning the two surveys and also the consent form. Your data will be anonymous, so it will not be possible for management to identify individual responses to the surveys. The survey has been approved by Bath University Psychology Department Ethics Committee (ref number 15-192).

**What should I do next if I'd like to take part?**

Please complete the first survey and consent form (both attached to the invite email) by hand or electronically, and return by 30th October 2015 using the postal or email address at the end of the survey. You will then receive another email in March 2016 asking you to complete and return the same survey again.

**What if I have some questions?**

Please feel free to contact any of the study team if you have any questions about the survey.

**Study team contact details**

Sam Waldron, Trainee Clinical Psychologist , East/Central CAMHS 43 Ducie Road, Barton Hill, Bristol, BS5 0AX, Email: sam.waldron@nbt.nhs.uk, Telephone: 0117 340 8600

Dr Maria Loades, Course Tutor and Clinical Psychologist, Bath University, Claverton Down Rd, Bath, North East Somerset, BA2 7AY. Email: m.e.loades@bath.ac.uk, Tel: 01225 38 5249

## CLINICIAN SURVEY CONSENT FORM

**Title of Project**

*Survey of Clinician Views and Experiences of Routine Outcome Monitoring in NBT CAMHS*

**Study team:**

**Sam Waldron (Clinical Psychologist in Training – Bath University)**

**Dr Maria Loades (Clinical Psychologist and Course Tutor – Bath University)**

**Dr Sarah Libby (Clinical Psychologist – East/Central NBT CAMHS)**

1. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2. I understand that my participation is voluntary and that I am free to withdraw my data at any time without giving any reason, without any impact on my employment.
3. I understand that any data I provide will be kept confidential and anonymised once I have completed and returned both the October 2015 and the March 2016 surveys.
4. I agree to take part in the above study.

Name of Participant (please write or type here):

Date (please write or type here):

## Appendix F: Service Improvement Project Generic Case Interview Prompts

1. Which ROM measures have been completed, by whom and how often?
2. How were the ROM measures introduced?
3. Where were the ROM measures completed?
4. How much time has been spent discussing the ROM scores in session?
5. Overall, do you think using ROM has been useful in this case?
6. Can you describe some ways in which the use of ROM has been a good thing in this case?
7. Can you describe some ways in which the use of ROM has been a bad thing in this case?
8. Do you have any suggestions for how ROM could be better used in this service?

## Appendix G: Service Improvement Project Parent Interview Information Sheet and Consent Form

*You are invited to take part in a short 20-minute interview about your experience of filling in questionnaires (sometimes called Routine Outcome Monitoring) at CAMHS. Before you decide whether to take part, please read this information sheet, which explains why the interviews are being conducted and what your participation would involve.*

### Title of Project

Clinician, Young Person and Parent Views of Routine Outcome Monitoring in Bristol CAMHS

### Why are these interviews being done?

We want to ensure that we use our questionnaires in a way that works well for everyone (including parents/carers). Therefore we'd like to hear about your experiences of filling in these questionnaires.

### Do I have to take part?

No, you do not have to take part. It is entirely voluntary. Saying no will not affect your service from CAMHS in any way. If you decide to take part, and then later change your mind, you can withdraw without giving your reasons.

### What will I be asked to do if I take part?

You will be asked to complete a 20-minute interview with a trainee Clinical Psychologist called Sam Waldron about your experiences of filling in questionnaires in CAMHS.

### Will my data be kept confidential?

Yes. All interview data will be kept confidential and will conform to the Data Protection Act of 1998. All data will be saved on the NHS password protected system with access restricted to study personnel. Any information linking you to the data will be destroyed so that you cannot be identified from it.

**Are there any advantages from taking part?**

The information collected from you will help us improve the way we use questionnaires in CAMHS. Everyone who takes part will receive a £5 gift voucher as a token of appreciation.

**Are there any disadvantages/risks from taking part?**

We consider there to be minimal disadvantages, except for the time it will take for you to complete the 20-minute interview. This project has been approved by Bath University Psychology Department Ethics Committee.

**What should I do next if I'd like to take part?**

Please complete the consent form enclosed and give it to your clinician. You can then expect Sam Waldron to call you within two weeks to arrange a time for your interview.

**What if I have some questions?**

Please feel free to contact any of the study team if you have any questions about the survey.

**Study team contact details**


Sam Waldron
Trainee Clinical Psychologist
Bath University,
Claverton Down Rd, Bath,
North East Somerset,
BA2 7AY
Email: s.waldron@bath.ac.uk
Telephone: 07534045074

Dr Maria Loades
Course Tutor and Clinical Psychologist
Bath University,
Claverton Down Rd, Bath,
North East Somerset,
BA2 7AY
Email: m.e.loades@bath.ac.uk
Tel: 01225 38 5249

## PARENT INTERVIEW CONSENT FORM

**Title of Project**

Clinician, Young Person and Parent Views of Routine Outcome Monitoring in Bristol CAMHS

**Study team:**

**Sam Waldron (Clinical Psychologist in Training – Bath University)**

**Dr Maria Loades (Clinical Psychologist and Course Tutor – Bath University)**

**Dr Sarah Libby (Clinical Psychologist – East/Central NBT CAMHS)**

Please tick all boxes

| | |
|---|---|
| I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. | ☐ |
| I understand that my participation is voluntary and that I am free to withdraw my data at any time without giving any reason. | ☐ |
| I understand that any data I provide will be kept confidential and anonymous. | ☐ |
| I agree to take part in the above study, and I also agree that Sam Waldron can contact me by telephone to arrange a time to conduct the 20 minute interview. | ☐ |

Name of parent: _____

Name of young person: _____

Signature of parent: _____ Date: _____

## Appendix H: Service Improvement Adolescent Interview Information Sheet and Consent Form

*Your child has been invited to take part in a short 20-minute interview about his/her experience of filling in questionnaires (sometimes called Routine Outcome Monitoring) in CAMHS. Before you decide whether he/she can take part, please read this information sheet, which explains why the interviews are being conducted and what your child's participation would involve.*

### Title of Project

Clinician, Young Person and Parent Views of Routine Outcome Monitoring in Bristol CAMHS

### Why are these interviews being done?

We want to ensure that we use our questionnaires in a way that works well for everyone (including young people). Therefore we'd like to hear about your child's experience of filling in these questionnaires.

### Does my child have to take part?

No, your child does not have to take part. It is entirely voluntary. Saying no will not affect his/her service from CAMHS in any way. If your child does take part, and then later changes his/her your mind, they can withdraw without giving reasons.

### What will my child be asked to do if they take part?

Your child will be asked to complete a 20-minute interview with a trainee Clinical Psychologist called Sam Waldron (which can be face-to-face at the CAMHS clinic or via the telephone).

### Will my child's data be kept confidential?

Yes. All interview data will be kept confidential and will conform to the Data Protection Act of 1998. All data will be saved on the NHS password protected system with access restricted to study personnel. Any information linking your child to the data will be destroyed so that he/she cannot be identified from it.

**Are there any advantages from taking part?**

The information collected from your child's interview will help us improve the way we use questionnaires in CAMHS. Everyone who takes part will receive a £5 gift voucher as a token of appreciation.

**Are there any disadvantages/risks from taking part?**

We consider there to be minimal disadvantages/risks, except for the time it will take for your child to complete the 20-minute interview. This project has been approved by Bath University Psychology Department Ethics Committee.

**What should I do next if my child would like to take part?**

Please complete the consent form enclosed and give it to your clinician. You can then expect Sam Waldron to call you within two weeks to arrange a time for your child's interview.

**What if I have some questions?**

Please feel free to contact any of the study team if you have any questions about the interview.

**Study team contact details**

| | |
|---|---|
| Sam Waldron<br>Trainee Clinical Psychologist<br>Bath University, Claverton Down Rd, Bath,<br>North East Somerset, BA2 7AY<br>Email: s.waldron@bath.ac.uk<br>Telephone: 07534045074<br><br>Dr Sarah Libby<br>Clinical Psychologist<br>East/Central CAMHS<br>43 Ducie Road, Barton Hill, Bristol, BS5 0AX<br>Email: sarah.libby@nbt.nhs.uk<br>Telephone: 0117 3408600 | Dr Maria Loades<br>Course Tutor and Clinical Psychologist<br>Bath University,<br>Claverton Down Rd, Bath,<br>North East Somerset,<br>BA2 7AY<br>Email: m.e.loades@bath.ac.uk<br>Tel: 01225 38 5249 |

## ADOLESCENT CONSENT FORM

**Title of Project**

Clinician, Young Person and Parent Views of Routine Outcome Monitoring in Bristol CAMHS

**Study team:**

**Sam Waldron (Clinical Psychologist in Training – Bath University)**

**Dr Maria Loades (Clinical Psychologist and Course Tutor – Bath University)**

**Dr Sarah Libby (Clinical Psychologist – East/Central NBT CAMHS)**

Please tick all boxes

| | |
|---|---|
| I confirm that I have read and understand the information sheet for the above study. My child and I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. | ☐ |
| I understand that my child's participation is voluntary and that we are free to withdraw his/her data at any time without giving any reason. | ☐ |
| I understand that any data my child provides will be kept confidential and anonymous. | ☐ |
| I agree that my child can take part in the above study, and I agree for Sam Waldron to contact me by telephone to arrnage my child's interview. | ☐ |

Name of young person:_____

Name of parent/carer: _____

Signature of parent: _____ Date: _____

# Appendix I: Service Improvement Project Presentation Delivered at the Annual CAMHS Network Research Day

## Routine Outcome Monitoring in CAMHS

*Evaluating initial implementation to generate improvement ideas*

**Sam Waldron, Trainee Clinical Psychologist**

*Sarah Libby & Barbara Hills*

1

## Aims & Methods

- Evaluate experience and highlight challenges during the initial 6-month ROM implementation period
- Generate improvement ideas to help find solutions for the whole service
- Quantitative and qualitative
  - Clinician survey (N = 20) ≈ 30% response rate
  - Case interviews (N = 5)

2

**Assessment**
Current View
Symptom/Functioning tracker
Goal-Based Outcome
Session-Feedback

Within first 3 sessions (core, partnership or specific)

**Review**
Current View (if applicable)
Symptom/Functioning tracker
Goal-Based Outcome
Session-Feedback

After 5-8 sessions or discharge if sooner

**Discharge**
Current View
Symptom/Functioning tracker
Goal-Based Outcome
Session-Feedback
Experience of Service Questionnaire

Final session with the child, young person or family

3

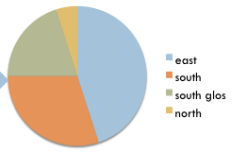
- **Anxiety and Depression**
  - *RCADS + sub-scales*
  - *Depression – PQ9*
  - *Generalised Anxiety – GAD7*
  - *PTSD - Impact of Events Scale*
- **Eating Disorders**
  - *Eating Questionnaire – A (EDE-A) for Adolescents (12-14)*
  - *Eating Disorder Examination Questionnaire (EDE-Q 6.0) 15+*
- **Family functioning/Parenting**
  - *Score 15 - Index of Family Functioning and Change*
  - *Brief Parenting Self Efficacy Scale (BPSES)*
- **Behavioural Issues**
  - *How are Things – Behavioural Difficulties*
- **Learning Disability**
  - *The Sheffield Learning Disability Outcomes Measure*
- **Broad Focus/Global Measures**
  - *Outcome Rating Scale (13+/Child/Group/Young Child)*
  - *Strengths and Difficulties Questionnaire (YP 11-17, Carer 4-17 & 3-4)*
  - *YP-CORE/CORE 10*
  - *Health of the Nation Outcome Scale for Adolescents (YP 13-18, Carer, Clinician)*
  - *Short/Warwick Edinburgh Mental Well Being Scale (12+)*
  - *Regular Monitoring Questionnaire (How are you doing – YP 11-17/How is your child doing- Carer)*

4

## Demographics

| Clinician Survey | |
|---|---|
| 11 Clinical Psychologists | 55% |
| 2 Family Therapists | 10% |
| 2 Psychiatrist | 10% |
| 2 Nurses | 10% |
| 1 Psychotherapist | 5% |
| 1 Occupational Therapist | 5% |
| 1 PMHS | 5% |

- Average age of 49
- 75% female
- 40% completed some form of IAPT training
- Average13 years CAMHS experience




Case interviews
- Variety of presenting problems
- Three adolescents & two parents/carers
- Three clinical psychologists, one family therapist & one psychiatrist

5

## Use of ROM (survey data)

*Table 1: Change in general use of ROM over time*

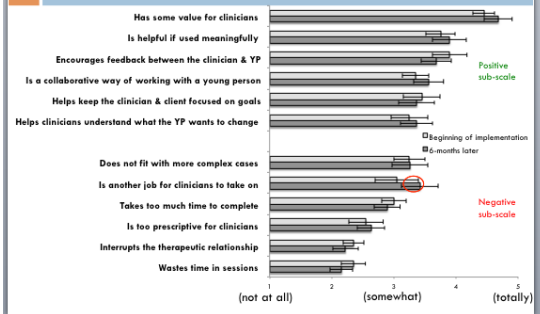
| | Sept 2015 | March 2016 |
|---|---|---|
| Rarely | 11% | 5% |
| Sometimes | 39% | 28% |
| Often | 50% | 67% |

*Table 2. Proportion of clinicians using different ROM*

| | |
|---|---|
| **RCADS** | 70% |
| **Goal Outcome** | 55% |
| **Session Rating Scale** | 55% |
| **Specific symptom trackers** | 20% |
| **Outcome Rating Scale** | 20% |
| **Current view** | 20% |

6

## Clinician endorsement of statements (survey data)




7

## Case triangulation (interview data)

| | |
|---|---|
| **Areas of agreement** | *Clinicians and SUs generally agreed that ROM helped the therapist to understand and focus on SU goals, and track change* |
| **Areas of disagreement** | *Clinicians were more likely than the SUs to think that the use of ROM had negatively affected the therapeutic relationship* |

8

## What's working well? (themes from survey and interviews)

- Many clinicians becoming more confident using ROM
- Several clinicians reporting it can aid assessment, goal-setting, conversation and progress tracking (e.g., 'objective' view of change - visual graphs can be powerful)
- SUs value setting shared/collaborative goals
- Young people don't seem phased by ROM
- Seems to work best when explained in session
- The goal outcome form formalises standard practice
- Useful adjunct to clinical judgment

9

## Key challenges (themes from survey and interviews)

- Some clinicians prefer not to use ROM
  - Philosophical clashes
  - Concerns re. what is actually captured, and how data will be used
  - Lack of time/other priorities
  - Top-down directive
- ROM doesn't always feel appropriate
- Lack of technological support
- Many clinicians feel uncomfortable using the Session Rating Scale
- Some SUs reported insufficient discussion of results
- Some SUs reported being given too many ROMs at once

10

## Appendix J: Service Improvement Project - Feedback

The CAMHS development worker responsible for leading the implementation of ROM across all four teams was asked to provide feedback in response to three key questions. Her responses are presented below:

**Overall, how useful has this project been to your service?** *"*The project has been very useful to the service in highlighting the positive benefits of using ROMs and ways in which the use of ROMs can be improved. It was really useful to have feedback from both clinicians and service users".

**Was the presentation delivered at the CAMHS research day a helpful part of the process?** *"*The project was very well presented at the CAMHS research day and engaged clinicians in thinking about positive and negative aspects of ROMs, and how to improve their usefulness in the service. The project has raised the profile of ROMs".

**What is likely to change as a result of this project (e.g., are the service improvement ideas generated by the project likely to be implemented)?** *"*The improvement ideas generated by project have been discussed at CAMHS Clinical Outcome Group meetings and the following ideas are being taken forward:

- Development of guidelines on where ROMs not appropriate and developing method for recording this in clinical notes
- Suggestion that case discussions use ROMs to highlight where these have worked well and been useful in treatment
- Improving use of technology to gather ROMs – This continues be challenging but positive developments have been made in some clinicians using laptops to directly use ROMs in sessions and current system being developed to improve the use feedback of results to families
- Developing use of ROMs in Specialist Services
- Developing on-going training programme including training day
- Ensuring clinicians are aware of all ROMs options that can be used so more generic measures can be used e.g. Outcome Rating Scale where clinicians feel symptom tracking measures are not appropriate

## Appendix K: Author Instructions for Journal of Pediatric Psychology

The *Journal of Pediatric Psychology* (ISSN 0146-8693) is published ten times a year by Oxford University Press for the Society of Pediatric Psychology, PO Box 170231, Atlanta, GA 30317. The journal is the scientific publication of the Society of Pediatric Psychology (SPP), Division 54 of the American Psychological Association, whose mission is to promote the health and psychological well being of children, youth and their families through science and an evidence-based approach to practice, education, training, advocacy, and consultation. As such, the journal publishes articles related to theory, research, and professional practice in pediatric psychology.

Pediatric psychology is an interdisciplinary field addressing physical, cognitive, social, and emotional functioning and development as they relate to health and illness issues in children, adolescents, and families. The journal publishes papers on a wide variety of topics exploring the interrelationship between psychological and physical well-being of children, adolescents, and families including: psychosocial and developmental factors contributing to the etiology, course, treatment, and outcome of pediatric conditions; assessment and treatment of behavioral and emotional concomitants of disease, illness, and developmental disorders; the role of psychology in healthcare settings; behavioral aspects of pediatric medicine; the promotions of health and health-related behaviors; the prevention of illness and injury among children and youth; and issues related to the training of pediatric psychologists.

### Instructions to Authors

The *Journal of Pediatric Psychology* is an official publication of the Society of Pediatric Psychology, Division 54 of the American Psychological Association. JPP publishes articles related to theory, research, and professional practice in pediatric psychology.

**Types of Manuscripts**

- Original research, including case studies
- Review articles
- Commentaries

**Organization of manuscripts**

*Length of manuscript*: Original research articles should not exceed 25 pages, in total, including title page, references, figures, tables, etc.

Manuscripts (text, references, tables, figures, etc.) should be prepared in detailed accord with the Publication Manual of the American Psychological Association (6th ed.). There are two exceptions: (a) The academic degrees of authors should be placed on the title page following their names, and (b) a structured abstract of not more than 250 words should be included. The abstract should include the following parts: (1) Objective (brief statement of the purpose of the study); (2) Methods (summary of the participants, design, measures, procedure); (3) Results (the primary findings of this work); and (4) Conclusions (statement of implications of these data).

Key words should be included, consistent with APA style. Submissions should be double-spaced throughout, with margins of at least 1 inch and font size of 12 points (or 26 lines per page, 12-15 characters per inch). Authors should remove all identifying information from the body of the manuscript so that peer reviewers will be unable to recognize the authors and their affiliations. E-mail addresses, whenever possible, should be included in the author note.

*Informed consent and ethical treatment of study participants*: Authors should indicate in the Method section of relevant manuscripts how informed consent was obtained and report the approval of the study by the appropriate Institutional Review Board(s).

*Clinical relevance* of the research should be incorporated into the manuscripts. There is no special section on clinical implications, but authors should integrate implications for practice, as appropriate, into papers.

*Terminology* should be sensitive to the individual who has a disease or disability. The Editors endorse the concept of "people first, not their disability." Terminology should reflect the "person with a disability" (e.g., children with diabetes, persons with HIV infection, families of children with cancer) rather than the condition as an adjective (e.g., diabetic children, HIV patients, cancer families). Nonsexist language should be used.

## Appendix L: Main Research Project Chronic Pain Group Information Sheet and Consent Form

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**PARENT/CARER STUDY INFORMATION SHEET (v1 – 25.8.16)**

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**Why is this research being done?**

Dr Sam Waldron is conducting this research as part of his Clinical Psychology training. Mindfulness (a general tendency to pay attention to the present moment without judgment) has been found to be associated with lower levels of distress in adults experiencing chronic pain. We want to find out whether this is also the case with adolescents.

**Does my child have to take part?**

No, your child does not have to take part - it is entirely voluntary. Saying no will not affect the care we provide for your child in any way. If your child decides to take part and then later changes his/her your mind, you can withdraw their data immediately.

**What will my child be asked to do if they take part?**

Your child will need to complete the short questionnaires in this pack, which usually takes about 20 minutes. Taking part in this study does not mean your child will receive any extra treatment.

**Will my child's data be kept confidential?**

Yes. All questionnaire data will be kept confidential and will conform to the Data Protection Act of 1998. All personal data (information that could be identified as your child) will be kept securely at the Bath Centre for Pain Services with restricted access to study personnel. Only anonymised data (data that can't be linked to your child) will be saved onto password-protected computers and used in reports and publications. The study team will also need to access some of the information your child previously provided to the Oxford Centre for Children and Young People in Pain during standard assessment. This information will also be kept confidential and will be anonymised (as above).

In the unlikely event that your child discloses information suggesting that they are at risk to themselves or others during the process of completing the questionnaires, the Chief Investigator would need to share this information with a clinician at the Oxford

Centre for Children and Young People in Pain. Only under these rare circumstances would confidentiality be broken.

**Are there any advantages from taking part?**

In addition to the £5 gift voucher, the information your child provides in this study could also help us to develop better treatments for young people experiencing chronic pain.

**Are there any disadvantages or risks from taking part?**

We do not think there are likely to be any disadvantages or risks. However, sources of support are listed at the end of the study pack in case you or your child became distressed whilst taking part in this study.

**What should we do next if my child would like to take part?**

Please sign the consent form, your child needs to complete the four pages of questionnaires and then please either hand it back to a clinician or return it by post using the pre-paid envelope.

**What if I have some questions?**

You can contact a member of the study team if you have any questions (see below). You could also contact the NHS Patient Advice and Liaison Service (PALS) if you want independent advice.

*This project has been approved by a NHS research ethics committee (ref number 16/EE/0319), the Health Research Authority and the University of Bath.*

**Study team contact details**

Dr Samuel Waldron
Trainee Clinical Psychologist
University of Bath, Bath,
BA2 7AY
Email: s.waldron@bath.ac.uk
Telephone: 07534045074

Dr Liz Marks
Academic Supervisor and Clinical Psychologist
University of Bath, Bath, BA2 7AY
Email: e.marks@bath.ac.uk
Tel: 01225 38 4051

## YOUNG PERSON STUDY INFORMATION SHEET (v1 – 25.8.16)

**Why is this research being done?**

We want to find out more about what it's like for young people living with long-lasting pain.

**Do I have to take part?**

No, it is your choice. Saying no will not affect the care we provide for you in any way. You can change your mind at any time.

**What will I be asked to do if I take part?**

You will need to complete a few short questionnaires about how you live your life and what it's like living with pain, which usually takes about 25 minutes. Taking part in this study does not mean you will receive any extra treatment.

**What will happen to the information I provide?**

All of the information you provide will be kept secure and safe. When we write about this study, we will not use your name, so no one reading our reports will know you took part in the study.

**Are there any advantages from taking part?**

In addition to the £5 gift voucher, the information you provide could help us to develop better treatments for young people experiencing long-lasting pain.

**Are there any disadvantages or risks from taking part?**

We do not think there are any disadvantages or risks. However, sources of support are listed at the end of the study pack in case you become distressed whilst taking part in this study.

*This project has been approved by a NHS research ethics committee (ref number 16/EE/0319), the Health Research Authority and the University of Bath.*

## CONSENT FORM

**Title of Project**

Mindfulness and Chronic Pain in Adolescents

**Study team:**

**Dr Sam Waldron (Clinical Psychologist in Training – Bath University)**

**Dr Liz Marks (Academic Supervisor– Bath University)**

Please tick all boxes

| | |
|---|---|
| We confirm that we have read and understand the information sheet for the above study (version 1 dated 25.8.16). We have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. | ☐ |
| We understand that participation is voluntary, we are free to withdraw the data at any time without giving any reason, and all the data provided will be kept confidential and anonymous (along with the data the research team needs to access from the assessment at pain clinic). | ☐ |
| We understand that our decision to take part in this study will not affect access to, or quality of, care in any way. | ☐ |
| We agree to take part in the above study. | ☐ |

Name of young person:_____

Signature of young person:_____

Name of parent/carer: _____

Signature of paren/carer: _____

Date: _____

**Appendix M: Main Research Project Example Study Pack**

## STUDY QUESTIONNAIRES

***There are eight pages of questionnaires for the young person to complete. The parent/carer can help if needed, but please allow the young person to answer the questions as honestly as possible.***

Name: _____

Age: _____

Gender: ☐ male ☐ female

Ethnicity: _____

Date of birth: _____

*Please answer questions 1 and 2 using to the 0-10 scale below.*

0 (no pain) ---------- 10 (worst pain possible)

1. What was your average level of pain over the last week? (0-10) ☐
2. What is your level of pain at the moment? (0-10) ☐
3. Have you ever received treatment for your pain? _____
4. How old where you when you first noticed the pain? _____
5. Do you currently take medication for your pain? _____
6. Where in your body is the pain located? _____

There are many possible ways that pain can affect the lives of young people. Below are some statements that may or may not apply to you. Please read each statement and put a cross in the box (x) under the word that describes how often you have experienced each of these things in the LAST TWO WEEKS. Please make sure that you answer all questions.

**In this section, tell us about your social life and relationships you have with people.**

| | | **Never** | **Hardly ever** | **Sometimes** | **Often** | **Always** |
|---|---|---|---|---|---|---|
| 1. | I go out and meet friends | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2. | I spend time talking to people | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3. | I enjoy social activities | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4. | I feel distant from my friends | ☐ | ☐ | ☐ | ☐ | ☐ |
| 5. | I have difficulty spending time with groups of people | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6. | I stay in touch with my friends | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7. | I feel like my friends don't want to see me | ☐ | ☐ | ☐ | ☐ | ☐ |
| 8. | I go to movies, concerts, or clubs | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9. | I miss out on chances to spend time with other | ☐ | ☐ | ☐ | ☐ | ☐ |

**In this section, please tell us about activities that you take part in and difficulties you may have.**

| | Never | Hardly ever | Sometimes | Often | Always |
|---|---|---|---|---|---|
| 1. I need help with dressing or bathing | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2. I can walk up a normal flight of stairs | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3. I lie down and rest during the day | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4. I walk only with crutches, a stick, or help from another | ☐ | ☐ | ☐ | ☐ | ☐ |
| 5. I get out of the house by myself | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6. I need help with certain movements (like getting out of a car or bathtub) | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7. I walk normally | ☐ | ☐ | ☐ | ☐ | ☐ |
| 8. I do physical, recreational or fun activities | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9. I lift heavy objects | ☐ | ☐ | ☐ | ☐ | ☐ |

**In this section, we are interested in knowing about your feelings and other experiences you may be having.**

| | Never | Hardly ever | Sometimes | Often | Always |
|---|---|---|---|---|---|
| 1. I feel sad | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2. I feel hopeless about the future | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3. I find it hard to concentrate | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4. I feel discouraged | ☐ | ☐ | ☐ | ☐ | ☐ |
| 5. I think about myself in a | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6. I feel that everything I do is an effort | ☐ | ☐ | ☐ | ☐ | ☐ |

**In this section, please tell us about any general worries or feelings that you may have.**

| | | Never | Hardly ever | Sometimes | Often | Always |
|---|---|---|---|---|---|---|
| 1. | I worry about the future | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2. | I feel nervous | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3. | I have feelings of panic | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4. | I feel at ease | ☐ | ☐ | ☐ | ☐ | ☐ |
| 5. | I feel shaky | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6. | I feel physically tense | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7. | I am afraid | ☐ | ☐ | ☐ | ☐ | ☐ |

## STUDY QUESTIONNAIRES

Below you will find a list of statements. **Rate how true each statement is as a statement about you**. Use the 0-4 rating scale below to make your choices. For instance, if you believe a statement is "Always True", you would **circle** the number 4 in the box to the right of that statement.

| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Never true | Rarely true | Sometimes true | Often true | Always true |

| | | | | | |
|---|---|---|---|---|---|
| 1. I am getting on with my life no matter what my level of pain is | 0 | 1 | 2 | 3 | 4 |
| 2. My life is going well, even though I have chronic pain | 0 | 1 | 2 | 3 | 4 |
| 3. It's O.K. to experience pain | 0 | 1 | 2 | 3 | 4 |
| 4. I would give up important things in my life to control this pain better | 0 | 1 | 2 | 3 | 4 |
| 5. I can do activities well even if I do not control my pain | 0 | 1 | 2 | 3 | 4 |
| 6. I am living a normal life with my chronic pain | 0 | 1 | 2 | 3 | 4 |
| 7. I need to concentrate on getting rid of my pain | 0 | 1 | 2 | 3 | 4 |
| 8. I carry on with my normal activities when I feel pain | 0 | 1 | 2 | 3 | 4 |
| 9. I do things that are important and things that are fun even though I have chronic pain | 0 | 1 | 2 | 3 | 4 |
| 10. Controlling pain is less important than other goals in my life | 0 | 1 | 2 | 3 | 4 |
| 11. My thoughts and feelings about pain must change before I can do things that are important to me | 0 | 1 | 2 | 3 | 4 |
| 12. Despite the pain, I am staying on a particular course in my life | 0 | 1 | 2 | 3 | 4 |
| 13. Keeping my pain under control is the most important thing whenever I am doing something | 0 | 1 | 2 | 3 | 4 |
| 14. Before I can make any real plans, I have to get some control over my pain | 0 | 1 | 2 | 3 | 4 |
| 15. When my pain increases, I can still do things I have to do | 0 | 1 | 2 | 3 | 4 |
| 16. I will have better control over my life if I can control my thoughts about pain | 0 | 1 | 2 | 3 | 4 |
| 17. I avoid situations where pain might increase | 0 | 1 | 2 | 3 | 4 |
| 18. My worries and fears about my pain are true | 0 | 1 | 2 | 3 | 4 |
| 19. I realize that I don't have to change my pain to get on with my life | 0 | 1 | 2 | 3 | 4 |
| 20. I have to struggle to do things when I have pain | 0 | 1 | 2 | 3 | 4 |

## STUDY QUESTIONNAIRES

Below are 13 sentences of different thoughts and feelings you can have when you are in pain.
Try to show us as clearly as possible what you think and feel by putting a circle around the word to the right of each sentence that best describes **how strongly you have each thought**.

| | | | | | |
|---|---|---|---|---|---|
| 1. When I am in pain, I worry all the time about whether the pain will end | Not at all | Mildly | Moderately | Severely | Extremely |
| 2. When I am in pain, I feel I can't go on like this much longer | Not at all | Mildly | Moderately | Severely | Extremely |
| 3. When I am in pain, it's terrible and I think it's never going to get better | Not at all | Mildly | Moderately | Severely | Extremely |
| 4. When I am in pain, it's awful and I feel that it takes over me | Not at all | Mildly | Moderately | Severely | Extremely |
| 5. When I am in pain, I can't stand it anymore | Not at all | Mildly | Moderately | Severely | Extremely |
| 6. When I am in pain, I become afraid that the pain will get worse | Not at all | Mildly | Moderately | Severely | Extremely |
| 7. When I am in pain, I keep thinking of other painful events | Not at all | Mildly | Moderately | Severely | Extremely |
| 8. When I am in pain, I want the pain to go away | Not at all | Mildly | Moderately | Severely | Extremely |
| 9. When I am in pain, I can't keep it out of my mind | Not at all | Mildly | Moderately | Severely | Extremely |
| 10. When I am in pain, I keep thinking about how much it hurts | Not at all | Mildly | Moderately | Severely | Extremely |
| 11. When I am in pain, I keep thinking about how much I want the pain to stop | Not at all | Mildly | Moderately | Severely | Extremely |
| 12. When I am in pain, there is nothing I can do to stop the pain | Not at all | Mildly | Moderately | Severely | Extremely |
| 13. When I am in pain, I wonder whether something serious might happen | Not at all | Mildly | Moderately | Severely | Extremely |

## STUDY QUESTIONNAIRES

We want to know more about what you think, how you feel, and what you do generally. This questionnaire is not specific to times when you are experiencing pain. Please read each sentence, then circle the number to the right that tells us **how often each sentence is true for you.**

| | Never true | Rarely true | Sometimes true | Often true | Always true |
|---|---|---|---|---|---|
| 1. I get upset with myself for having feelings that don't make sense. | 0 | 1 | 2 | 3 | 4 |
| 2. At school, I walk from class to class without noticing what I'm doing. | 0 | 1 | 2 | 3 | 4 |
| 3. I keep myself busy so I don't notice my thoughts or feelings. | 0 | 1 | 2 | 3 | 4 |
| 4. I tell myself that I shouldn't feel the way I'm feeling. | 0 | 1 | 2 | 3 | 4 |
| 5. I push away thoughts that I don't like. | 0 | 1 | 2 | 3 | 4 |
| 6. It's hard for me to pay attention to only one thing at a time. | 0 | 1 | 2 | 3 | 4 |
| 7. I get upset with myself for having certain thoughts. | 0 | 1 | 2 | 3 | 4 |
| 8. I think about things that happened in the past instead of thinking about things that are happening right now. | 0 | 1 | 2 | 3 | 4 |
| 9. I think that some of my feelings are bad and that I shouldn't have them. | 0 | 1 | 2 | 3 | 4 |
| 10. I stop myself from having feelings I don't like | 0 | 1 | 2 | 3 | 4 |

**Debrief Sheet – you can detach and keep this if you want**

Study Title: Mindfulness and Chronic Pain in Adolescents

If either of you become upset or distressed as a consequence of taking part in this study, we suggest that you contact a clinician at Oxford Centre for Children and Young People in Pain.

Alternatively, you could speak to your GP, or you could contact a member of the study team using the details below:

Dr Samuel Waldron
Trainee Clinical Psychologist
University of Bath, Bath, BA2 7AY
Email: s.waldron@bath.ac.uk
Telephone: 07534045074

Dr Liz Marks
Academic Supervisor and Clinical Psychologist
University of Bath, Bath, BA2 7AY
Email: e.marks@bath.ac.uk
Tel: 01225 38 4051

You might also find some of the following helplines or websites useful:

**Young Person**

| | |
|---|---|
| Childline (0800 1111) | *www.childline.org.uk* |
| Pain Link Helpline (1300 340 357) | www.campaignforpain.org.au/painstories/adolescent-pain.html |
| | www.youngminds.org.uk/for_children_young_people |

**Parent/Carer**

| | |
|---|---|
| Pain Link Helpline (1300 340 357) | www.campaignforpain.org.au/painstories/adolescent-pain.html |
| Young Minds Parent Helpline (**0808 802 5544**) | www.youngminds.org.uk/for_parents |

## Appendix N: Evidence of HRA Ethical Approval

NHS
Health Research Authority

Dr Samuel M Waldron
University of Bath, Department of Psychology
Doctorate in Clinical Psychology Program
Claverton Down, Bath
BA2 7AY

Email: hra.approval@nhs.net

25 August 2016

Dear Dr Waldron,

**Letter of HRA Approval**

| | |
|---|---|
| **Study title:** | **Is Dispositional Mindfulness an Important Resilience Resource in the Context of Adolescent Chronic Pain?** |
| **IRAS project ID:** | **202295** |
| **Protocol number:** | **N/A** |
| **REC reference:** | **16/EE/0319** |
| **Sponsor** | **University of Bath** |

I am pleased to confirm that **HRA Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications noted in this letter.

**Participation of NHS Organisations in England**

The sponsor should now provide a copy of this letter to all participating NHS organisations in England.

*Appendix B* provides important information for sponsors and participating NHS organisations in England for arranging and confirming capacity and capability. **Please read *Appendix B* carefully**, in particular the following sections:

- *Participating NHS organisations in England* – this clarifies the types of participating organisations in the study and whether or not all organisations will be undertaking the same activities
- *Confirmation of capacity and capability* - this confirms whether or not each type of participating NHS organisation in England is expected to give formal confirmation of capacity and capability. Where formal confirmation is not expected, the section also provides details on the time limit given to participating organisations to opt out of the study, or request additional time, before their participation is assumed.
- *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* - this provides detail on the form of agreement to be used in the study to confirm capacity and capability, where applicable.

Further information on funding, HR processes, and compliance with HRA criteria and standards is also provided.

## Appendix O: Evidence of REC Approval

NHS
Health Research Authority
East of England - Cambridgeshire and Hertfordshire Research Ethics Committee
The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

**Please note: This is the favourable opinion of the REC only and does not allow you to start your study at NHS sites in England until you receive HRA Approval**

05 August 2016

Dr Samuel M Waldron
University of Bath, Department of Psychology
Doctorate in Clinical Psychology Program
Claverton Down, Bath
BA2 7AY

Dear Dr Waldron

| | |
|---|---|
| **Study title:** | **Is Dispositional Mindfulness an Important Resilience Resource in the Context of Adolescent Chronic Pain?** |
| **REC reference:** | **16/EE/0319** |
| **Protocol number:** | **N/A** |
| **IRAS project ID:** | **202295** |

Thank you for your letter of 04 August 2016 responding to the Proportionate Review Sub-Committee's request for changes to the documentation for the above study.

The revised documentation has been reviewed and approved by the sub-committee.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this favourable opinion letter. The expectation is that this information will be published for all studies that receive an ethical opinion but should you wish to provide a substitute contact point, wish to make a request to defer, or require further information, please contact the REC Manager Miss Georgia Copeland, nrescommittee.eastofengland-cambsandherts@nhs.net. Under very limited circumstances (e.g. for student research which has received an unfavourable opinion), it may be possible to grant an exemption to the publication of the study.

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**Confirmation of ethical opinion**

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

**Conditions of the favourable opinion**

The REC favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission must be obtained from each host organisation prior to the start of the study at the site concerned.

*Management permission should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).*

*Guidance on applying for HRA Approval (England)/ NHS permission for research is available in the Integrated Research Application System, www.hra.nhs.uk or at http://www.rdforum.nhs.uk.*

*Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.*

*For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.*

*Sponsors are not required to notify the Committee of management permissions from host organisations.*

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database. This should be before the first participant is recruited but no later than 6 weeks after recruitment of the first participant.

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact hra.studyregistration@nhs.net. The expectation is that all clinical trials will be registered, however, in exceptional circumstances non registration may be permissible with prior agreement from the HRA. Guidance on where to register is provided on the HRA website.

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**Statement of compliance**

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

**After ethical review**

Reporting requirements
The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback
You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website:
http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at http://www.hra.nhs.uk/hra-training/

| 16/EE/0319 | Please quote this number on all correspondence |
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With the Committee's best wishes for the success of this project.

Yours sincerely

Wallace

PP

**Mr David Grayson**
**Chair**

Email: nrescommittee.eastofengland-cambsandherts@nhs.net

Enclosures: *"After ethical review – guidance for researchers"*
*Copy to:* *Professor Jonathan Knight*
*Ms Jane Carter, Royal National Hospital For Rheumatic Diseases NHS Foundation Trust*

## Appendix P: Evidence of University of Bath Ethical Approval

**Dr Michael J Proulx**
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UNIVERSITY OF BATH
**Department of Psychology**
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05th August 2016

Dear Dr. Samuel Waldron

**Reference number 16-206: Is Dispositional mindfulness an important resilience resource in the context of adolescent pain?**

I am writing to confirm that the Psychology Ethics Committee has provided full ethical approval for the above project, as decided by Dr. Ailsa Russell via Chair's Action.

Best wishes with your research.

Dr Michael J Proulx
Chair Psychology Ethics Committee